

NEW ORLEANS IN 1880.

LOCATION.

New Orleans lies on both banks of the Mississippi river, its principal part being on the left bank, 107 miles from the outer end of the jetties at the mouth of the South pass. Its site is of the formation peculiar to river deltas. Its greatest natural elevation is 10 feet 8 inches above the sea-level, but this is artificially increased by the levee on the river bank to 15 feet. Half a mile back from the left bank of the river the elevation is but little above the sea-level, so that, especially during high stages of the river, a large part of the city is below the natural water line, and depends for its safety on the high river bank and on the protection levees at the upper and lower sides and along lake Pontchartrain, which lies a few miles back from the river. More than half the distance between the river and the lake is an almost unreclaimed swamp, through which runs Metairie ridge, which reaches an elevation of only 3 feet and 2 inches, and a few other minor elevations of considerable relative importance. The margin of lake Pontchartrain (natural surface) is about 3 feet and 4 inches above the swamp.

Lake Pontchartrain is 30 miles long and 24 miles wide. It receives a considerable influx from the Mississippi river through old crevasses, and has several tortuous navigable outlets to lake Borgne and Mississippi sound, and thence to the Gulf of Mexico. A small lake, Maurepas, lies to the west of Pontchartrain in the course of the crevasse channels. There are indications that the course of the Mississippi river, at no very distant period, followed the course of these present crevasses, and that lake Maurepas bore the same relation to the Gulf of Mexico that Mississippi sound now does, the various divisions between the present lakes being the result of a formation of bars similar to what has more recently occurred in front of the several passes of the present river.

During the prevalence of high water in the Mississippi, or of continuous northerly winds backing up the waters of lake Pontchartrain, or of strong north winds which pile these waters up against the south shore, the swamp lands between the lake and the settled portions of the city are often covered with water. At times these overflows, one of which occurred in the winter of 1880-'81, cause serious inundations to occupied portions of the city. A settled district between Hagan avenue and Broad street is only 3 feet above sea-level. The land on the right bank (Algiers) is lower than that on the left, its minimum elevation above sea-level being only 12 inches. The elevation of the water of the river, as it passes through the city, is from 0.79 of a foot below the mean level of the Gulf of Mexico (low water of 1871) to 14.65 feet above that level,^a so that the conditions obtaining in the rear portions of the city, on both sides of the river, are quite similar to those of Holland, and the city depends for its drainage on a rude form of pumping machinery similar to the older works of that country.

THE HARBOR.

The harbor of New Orleans comprises several turnings of the stream, and its shores are subject to certain changes, owing to the action of the great current. At points the slackening of the current produces heavy deposits of the alluvium with which its waters are charged, producing at these points a constant extension known as the "batture". This formation has created a considerable extension of the river front, amounting since the first settlement of the city to nearly 1,500 feet at the greatest width, near the foot of Delord street, and extending from near the foot of Felicite street, to about the Place d'Armes, at the center of the old French town. At other points the current, deflected with great force along the shore, produces a constant tendency of the bank to yield and "cave", thus shifting the bed of the river gradually in the direction of the yielding bank, without materially altering the width of the stream. This tendency produces on each side of the harbor two sorts of shore: first, the abrupt banks, where at all stages there is a sufficient depth of water to accommodate the largest vessels at the wharves; and, second, the batture, which has been followed up by the annual extension of the wharves at that

^a Thus the Mississippi river, 107 miles from its mouth, has been more than 9 inches lower than the nominal levels of the gulf at its mouth. This condition would be possible during the prevalence of long-continued strong north winds.

locality by moving them forward and filling behind them with earth to the level of the levee, so as to retain a minimum depth during the lowest stages of the water of 10 feet at the wharves of the river-going craft, and of 20 feet at those of sea-going vessels. The width of the river (the harbor) varies from 1,500 to 3,000 feet. The length of harbor in actual use for steamers and shipping, is about 7 miles on either shore.

On the left bank, where the greater part of the active commerce is carried on, there are 66 wharves capable of accommodating large steamers two abreast, or sail-vessels four abreast, and a wharf for river and coasting steamers and barges of nearly $1\frac{1}{2}$ mile front.

The shipping wharves have a length of from 80 to 140 feet. Large steamers, loading grain in bulk from floating elevators, sometimes receive their cargoes while at anchor in the stream. The bottom affords good anchorage throughout, being of tenacious clay, but of very irregular depth, the variations within a short distance being as much as 100 feet. The channel occupies the entire width of the river, its depth varying from 60 feet to 208 feet.

During high water the current reaches a speed of 5 miles an hour, while at low water it becomes extremely sluggish, sometimes less than 1 mile an hour. In August, 1846, there was no perceptible current. At extreme low water there is a tidal variation of a few inches.

Beside the river harbor two navigable canals pierce the city from lake Pontchartrain to within about one mile of the river, where they end in artificial basins. These are frequented by a large fleet of schooners and a few light-draught steamers, doing business with the northern shore of the lake and of Mississippi sound, with Mobile, Pensacola, the Pearl and the Amite rivers, and the sand and shell yielding coast east of the mouths of the Mississippi. "The Old Basin" is 400 feet long by 225 feet wide at the head of the navigable canal which runs to lake Pontchartrain through the bayou St. John. "The New Basin" is a large excavation with a head frontage of 250 feet. The total frontage of this basin and the sides of the canal, available for wharfage, is about seven-eighths of a mile. This canal runs directly to the lake.

WATER COMMUNICATION.

Not only is New Orleans within easy and safe communication with all points along the northern shore of the Gulf of Mexico to the east, and by the Mississippi river with the great northwestern basin, but it has recently, by the successful carrying out of the jetty enterprise, been brought into uninterrupted communication with the whole world, having now a safe entrance for the largest shipping, whereas a few years since vessels drawing 10 feet of water were often subject to detention in channels maintained by artificial dredging. Even the Great Eastern could now steam directly and at all times from the Gulf to the city's front.

So far as present experience and future probabilities warrant the formation of an opinion, it seems clear that a new departure has been taken in the commerce of New Orleans, and of the great district for which the Mississippi river and the lines of railway leading to New Orleans furnish a natural outlet.

THE JETTIES.

The vast burden of silt brought down by the Mississippi river and discharged at its several mouths, is carried seaward so long as the current maintains enough of its initial velocity to move it. When the current becomes so retarded by the waters of the Gulf as to lose its carrying power, the silt is deposited, forming bars which rise until their reduction of the depth of the stream secures a surface velocity adequate to its movement. The extension of the bar seaward seems to be prevented by the action of a littoral current moving mainly from east to west.

The bar thus formed in front of the South pass had its crest distant about 2 miles from the mouth of the pass, and carried a depth of only about 8 feet of water. The former navigation channel was maintained by mechanical means through the bar in front of the Southwest pass. It was shifting and uncertain, and rarely of adequate depth. The delays that it caused to navigation were a serious drawback to the commercial prosperity of the city and of the Mississippi valley.

Projects for the improvement of the navigation have always been entertained. The first of which record has been preserved is described, in the *Journal Historique de l'Établissement des Français à la Louisiane*, by Bernard La Harpe, one of the king's officers and a standard authority on every subject of which he treated. He reports the observations made in April, 1721, of M. de Panger, a knight of St. Louis, and an engineer, who arrived from France in November, 1720, being commissioned (under De La Tour) to fix a permanent site for the capital of the colony. He says:

Le 17, M. de Panger se rendit à l'embouchure du fleuve; après l'avoir bien sondée et examinée, il trouva que la barre était un dépôt de vase de cinq cents à neuf cents toises de largeur, au-dedans de l'entrée du fleuve, formé par la rencontre du flux de la mer et de l'affaiblissement du courant de la rivière, qui se déborde en plusieurs branches et canaux; que, dans ses débordemens, il est bourbeux, et dépose en s'albaissant une vase sur les terres et îles qu'il inonde, et sur les embarras d'arbres échoués dont elles paraissent avoir été formées. Comme le fleuve charriait alors une grande quantité de ces bois, dont partie sont échoués de côté et d'autre du canal de cette embouchure, il lui sembla qu'il serait aisé d'en placer d'avance, et d'en former des digues ou stacades, ainsi que d'en boucher quelques passes en les arrêtant à de vieux vaisseaux coulés à fond, ce qui augmenterait le courant sur la barre, la ferait couler, et l'emporterait, puisque la nature avait fait en partie d'elle-même cette opération depuis l'année passée; qu'il n'y avait trouvé que onze à douze pieds d'eau,

et au bout de huit mois treize à quatorze pieds; cette barre s'étant élargie jusqu'auprès de l'île à la Balise, où les ingénieurs se proposaient d'établir une batterie et une place maritime devant laquelle plusieurs vaisseaux tirant seize à dix-huit pieds d'eau, pourraient mouiller en sûreté. (a)

The conditions described by La Harpe had been considerably modified before Captain Eads, in 1874, "made a formal proposition to Congress to open the mouth of the Mississippi river, by making and maintaining a channel 28 feet deep between the Southwest pass and the Gulf of Mexico." The procedure adopted by him in opening a channel through the bar, in front of the Southwest pass, was substantially that suggested by De Pauger, modified to meet the changed conditions.

Captain Eads' proposition met with very strenuous opposition, especially on the part of the United States Engineer Corps, and his undertaking was embarrassed from the outset nearly to its completion, by political and financial obstacles of the most serious character. He pursued his project with indomitable pertinacity, and is entitled to almost as much credit for the perseverance with which he overcame these collateral obstacles, as for the complete success which attended the final execution of the work.

Important improvements were made at the head of the South pass and in its course, and two jetties were extended for a distance of about 12,000 feet beyond the most advanced bank, that on the west side. The jetties were located about 1,000 feet apart, but the channel was afterward narrowed by the construction of wing-dams to a width of from 600 to 800 feet. By the original proposition, which was accepted by the government, Captain Eads was to receive \$500,000 on the securing of a continuous channel from the river to the Gulf with a least depth of 20 feet, and a width of channel of 200 feet. For each 2 feet additional depth he was to receive an additional payment of \$500,000. The total compensation for the securing of a channel 350 feet wide, with a minimum depth of 30 feet, was to be \$5,250,000. One million dollars of the amount to be paid is to be retained by the government for ten years. If at the end of that time the channel is still maintained in good condition, one-half of the money withheld is to be paid, and the same condition being maintained for 20 years, the whole remaining sum is to be paid.

The work was practically completed in the month of July, 1879, though minor modifications and a re-enforcement of the ends of the jetties, by loading them with blocks of béton, have been continued since that date.

Opinions vary still as to the future of this work. The ultimate relation between the projected live current and the diverted littoral current to result from it will influence the future deposit of silt in a manner which can now be only a matter of conjecture. All that it is safe now to say is, that thus far the success of the enterprise is complete, and that there is no reason to apprehend insuperable difficulties, should it become necessary to extend the jetties still farther. The effect of this improvement on the prosperity of New Orleans cannot be a matter of conjecture, and its importance is hardly less to the whole Mississippi valley, and to that portion of the southwest connected with New Orleans by railway.

RAILROADS.

In 1880 New Orleans had the following railway communications:

New Orleans and Pacific railway—not completed.

Chicago, St. Louis, and New Orleans railroad to Cairo, Illinois.

New Orleans and Mobile railroad to Mobile, and thence by Montgomery or Columbus, Kentucky, to the east and north.

Morgan's Texas railway to Morgan City, thence by steamers to Galveston, and by rail to Houston and central Texas.

New Orleans and Texas railroad to Donaldsonville, Louisiana.

TRIBUTARY COUNTRY.

In one sense, and in the most important sense, the country tributary to New Orleans is the whole central basin of the United States, from the Alleghanies to the Rocky mountains. When we consider the district immediately contiguous and dependent upon this city for supplies as well as for the outlet of its products, we find that its industries are almost exclusively agricultural, devoted mainly to the production of sugar and cotton. The low pine and cypress lands along the northern shores of lake Pontchartrain, and for a distance of from 60 to 80 miles northward, send large quantities of pine and cypress lumber for local consumption and for export. Bricks are

a The 17th, M. de Pauger went to the mouth of the river; after having sounded it well and examined it, he found that the bar was a deposit of mud from 500 to 900 yards wide within the mouth of the river, formed by the meeting of the incoming tide of the sea and the weakening of the current of the river, which overflows in several branches and channels; that in its overflows it is muddy, and as the water falls deposits silt on the lands and islands that it inundates, and on the multitude of fallen trees, of which these seem to have been formed. As the river carries a great quantity of this wood, part of which is deposited on one side or the other of the channel of this mouth, it seemed to him that it would be easy to place some of them in advance and to form of them dikes or stockades; also, to close some of the passes by sinking old vessels in them, which would augment the current on the bar, cause it to flow and carry it away, since nature itself has partially performed this operation since last year; that he had found only 11 or 12 feet of water, and at the end of 8 months 13 or 14 feet; this bar had extended itself as far as the island of Balise, where the engineers proposed to establish a battery and a harbor, before which several vessels, drawing from 16 to 18 feet, could ride in safety.

largely manufactured for domestic use and for export, those made along the shores of the lake being universally preferred for pavements and for foundations. A softer sort of red building brick is made on the right bank of the river near the city. There are in the region turpentine orchards and charcoal districts of importance. The hill country lying beyond these wooded lands, and within easy reach of transportation by rail, produces large quantities of fruits and early vegetables for southern and even for remote northern and eastern towns. These industries are, however, all unimportant as compared with the production of the two great staples of the region, sugar and cotton. The waters along the coast and about the low pine-covered sand keys are rich in fish of the choicest kinds. Some of these islands also furnish inexhaustible supplies of building sand of the best quality, and of small fossil shells useful in road-making. Along the banks of the river above and below the city, the soil, a sandy alluvium of great fertility, is covered by an almost unbroken series of large plantations devoted to the production of sugar and rice. Sugar culture predominates, but on many of the lower lands the facility for irrigation and the occasional presence of a stiff black soil, are especially favorable for rice culture. Indian corn is largely raised, but only for plantation use. The well-known Perique tobacco is produced with the greatest success in the parish of St. James, about 60 miles from New Orleans, and some 3 or 4 miles back from the river, on a tract of slightly elevated country. The lands immediately about the city, where tolerably drained, are principally devoted to market gardening. Fine groves of orange trees in the "coast" country—as the river plantations are termed—both above and below the city, furnish the market with an abundant supply of fruit of the very best quality. The successful production of this fruit extends for a distance of 80 miles below the city. As a rule, the plantations line the banks of the Mississippi and of the several rivers or bayous entering the Gulf, these banks being higher than the lands farther back, which are mostly swamps covered with forests. The cultivation of onions and garlies is an important item of the industry of the parish of St. Bernard, immediately below the city—an old Spanish colony.

Of late efforts have begun to be made to reclaim and appropriate for the cultivation of rice, certain tracts of the marsh lands back of the plantations forming so large a proportion of the territory of lower Louisiana, and of the quaking prairies, whose soil is a vegetable mold resting on a stratum of clay of variable thickness, and often apparently underlaid by quicksands. It is from the mouths of small bays and bayous piercing these immense marshes that New Orleans is supplied with oysters, and from other innumerable lagoons that she obtains her abundant supply of wild duck and other water-fowl. The timbered swamps supply timber and Spanish moss as articles of commerce.

THE SITE.

New Orleans occupies a tract of land lying 12 miles along the left bank and across the convexity of a bend on the right bank of the Mississippi. Its width varies from $4\frac{3}{4}$ to $7\frac{1}{4}$ miles as to corporate limits, and from $\frac{3}{4}$ of a mile to 2 miles as to actual settlement. The natural drainage is away from the banks of the river, and generally toward neighboring waters, communicating with the Gulf or with the lakes to the north. The surrounding country, for a radius of about 5 miles, was formerly densely wooded, but now has been almost completely cleared. The soil, whether the sand of the river banks and slight elevations, or the dark stiff earth of the swamp lands, is of great fertility. The alluvial deposit is generally but 2 or 3 feet in thickness, resting on a substratum of uniform and tenacious blue clay. The sinking of an artesian well, begun in 1854, in the heart of the city, pierced this clay to a depth of 15 feet, and then struck another stratum of clay mixed with woody matter of less than 4 feet thickness. Beneath this lay a mixture of sand and clay 10 feet thick, resembling the annual deposits of the river. Below these was a continual though irregular alternation of these strata of clay, varying in thickness from less than 12 inches to more than 60 feet, with layers of sand and shell and of mixtures of these with the clay. At a depth of 335 feet a uniform stratum of 145 feet was struck. The well was abandoned at a depth of 630 feet. No masses of rock were found, only a few water-worn pebbles and some contorted and perforated stones. At a depth of 582 feet there was encountered a stratum of hard pan. No other investigations seem ever to have been made of the geological character of the site of the city or of the country immediately surrounding it.

THE CLIMATE.

The climate of New Orleans is of the character known as "insular", the city being almost completely surrounded by open bodies of water and swamps and marshes. The winds from all quarters become charged with moisture, and thus modify the extremes of heat and cold. The highest recorded summer temperature since 1819 is 100° Fahr. This point has been reached but three times in this period. The highest summer temperature in average years is 94.7° Fahr. The lowest recorded winter temperature, reached but once, is 16° Fahr. The lowest winter temperature in average years is 27.4° Fahr. The cold and dry northeasterly winds, noticeable to the northwest and southwest of New Orleans, lose their reputed evaporating power, and by the time they have reached the city have become tempered by the marshes and bodies of water over which they have passed. The prevailing winds are from the southeast, bringing much vapor gathered in their passage over the marshes skirting the Gulf of Mexico. The air is therefore always in a condition of high humidity. The heat rays are absorbed and the direct solar heat made much less intense than it would be were the climate more dry. There are no elevations of land sufficiently near to affect the air-currents reaching the city from any direction. The influence of the immense sea marshes, which lie a few miles

away on several sides, is probably confined to the dampening of the atmosphere already noted. The swamp lands, either now or formerly covered with forests, still undrained and surrounding the immediate suburbs of the city, are the cause of much malarial fever. No record of "sick rate" has been kept, except in a very fragmentary form; but the general verdict of the best-informed physicians of New Orleans, attributes fully one-third of all the sickness (not of the mortality) to malarial fevers, resulting from the proximity of these wet lands and from the deficient drainage of the city itself, notably the latter. It is also maintained by the same authorities, that other diseases, almost without exception, are subject to malarial complications. This malarial influence is not of a severe type, save in districts nearest the swamps, particularly the lower part of the city, where the swamp approaches very near to the river, and in that part lately joined to it on the right bank of the Mississippi. The river, by its great width and rapid movement, seems to act as a barrier to the malarious influence of the swamps beyond it, and malarial fevers are rarer and generally milder in proportion as they occur in those parts of the city near the river bank. The high humidity of the atmosphere of New Orleans seems to tend to a reduction of the natural powers of resistance to this influence, inducing lassitude, affections of the alimentary canal, and general depletion during the warmer seasons, and affections of the respiratory organs, rheumatism, and kidney derangements during winter. On the other hand, the resulting moderate range of temperature, both daily and annual, gives a climate favorable to young children, an effect further heightened by the free ventilation and the full exposure of the generally low houses to sunlight and air.

STREETS.

The total length of the streets of New Orleans is 566.29 miles, of which 472.34 miles are unpaved.

Total length paved with each of the following materials:

	Miles.
Cobble-stones.....	32.94
Stone blocks.....	22.06
Nicholson.....	1.66
Broken stone.....	8.87
Plank road.....	4.88
Shell.....	23.54

The estimated cost of each is as follows:

Cobble-stone, per square yard.....	\$2 25
Stone blocks, per square yard.....	4 75
Nicholson, per square yard.....	3 40
Broken stone, per running foot of 20 feet width.....	2 25
Plank road, per M feet, board measure.....	18 50
Shell, per running foot of 20 feet width.....	2 25

The cost of repairs cannot be exactly determined. There is an undivided appropriation of \$300,000 for the expense of keeping streets in repair, keeping them clean, and removing garbage.

The estimated annual cost of repairs, per square yard, is as follows: Cobble-stones, 10 cents per annum; stone blocks, 10 cents per annum; broken stone or shell, 25 cents per annum.

Concerning the relative facility with which each is kept clean, the report says: "Stone blocks are far the easiest kept clean; cobble-stones much easier than wood (plank), broken stone, or shell."

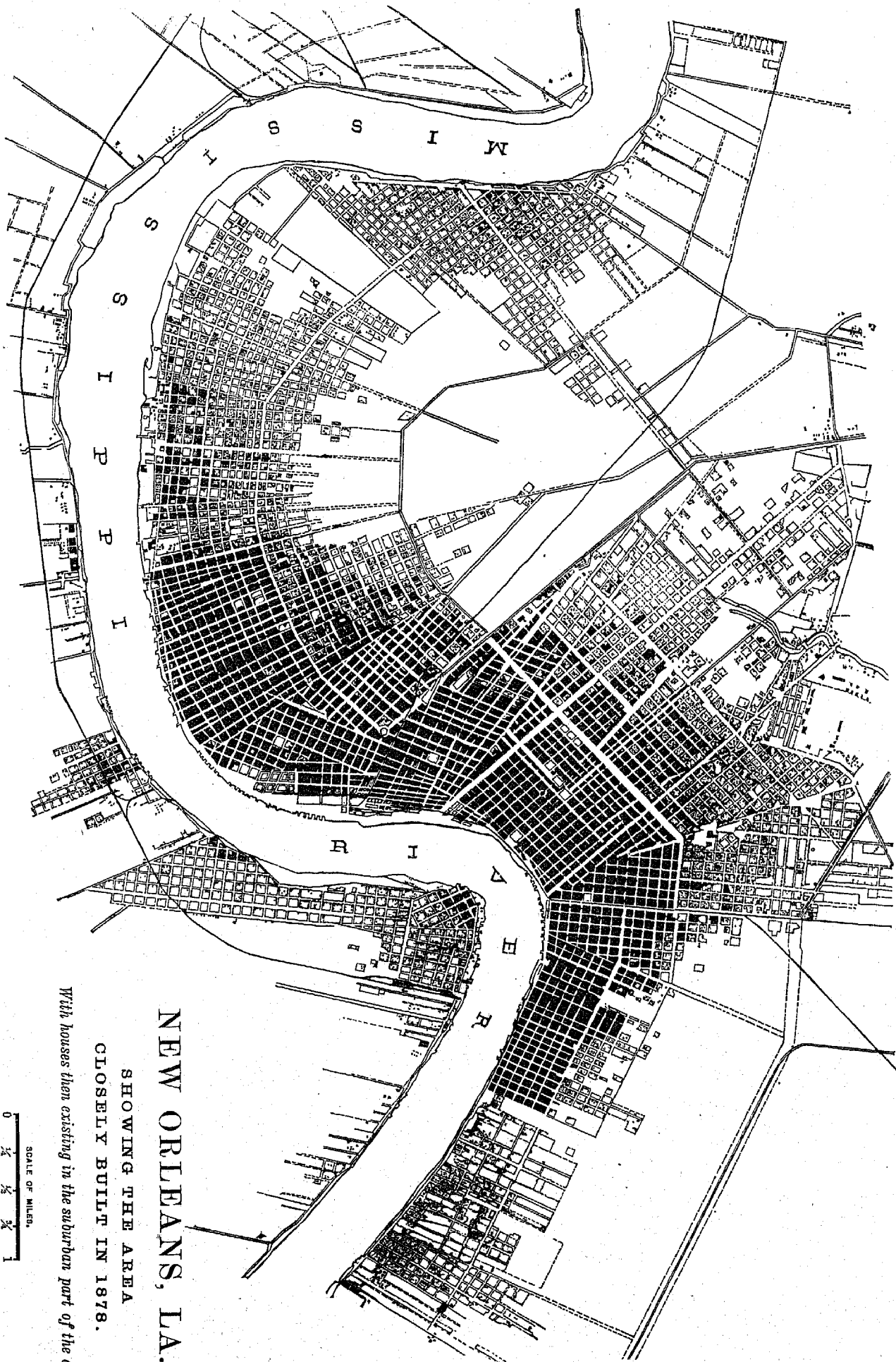
Concerning economy, stone blocks are found to be beyond comparison the best and cheapest for streets of heavy traffic, where alone they are used. Cobble-stones are cheaper than wood, broken stone, or shell. These latter are more expensive than unpaved streets. Shell roads, made of oyster-shells pulverized and rolled, make fine carriage drives, but they wear rapidly, and easily fall into bad repair, so that their maintenance is difficult and costly.

The great length of unpaved streets is one of the serious drawbacks of the city. The natural soil is of such a character, that, under the action of heavy rains it becomes an almost impassable mire, and during drought is extremely dusty. At times, on such streets, traffic is almost restricted to the lines of the street railroads, which are either planked or paved between the tracks, and to the sidewalks.

SIDEWALKS.

The sidewalks, called "banquettes", are generally from 10 to 12 feet wide, and paved for the whole width. In streets occupied by the better class of residents, they are often much wider and paved with German flags, or with an artificial stone called Schillinger pavement, which is excellent. In most of the business parts of the city, the sidewalks are covered with North River blue-stone flags; but the common sidewalk pavement, of the closely settled but poorer districts, is almost exclusively of brick. In the newer quarters, especially in those recently included within the extended corporate limits, sidewalks are generally of plank only, and narrow.

Each property owner is required to keep in repair the sidewalk in front of his premises; hence no report of the total amount of sidewalk, or of the extent of walks of different materials, has ever been made.



NEW ORLEANS, LA.

SHOWING THE AREA
CLOSELY BUILT IN 1878.

With houses then existing in the suburban part of the city.

SCALE OF MILES,
0 1/4 1/2 3/4 1

GUTTERS.

On the paved streets the gutter is bounded by a curb of North River blue-stone or of Boston granite, and the stone pavement of the arched street extends to this in paved streets. In those paved with wood, shell, or broken stone, the gutters have a bottom of heavy plank, and these are often separated from the sidewalks by wooden curbs.

On many of the streets running back from the river the gutters are deep channels from 2 to 3 feet wide, curbed on both sides with stone or wood, and capable of carrying large bodies of water, the excessive rainfall of tropical storms often exceeding the capacity of these gutters and of the drainage canals beyond, and flooding the whole width of the street at a distance of about half a mile back from the levee, where the flatter grade begins.

TREE PLANTING AND GRASSED PLACES.

Trees are very extensively planted throughout the entire city, outside of the more active business districts, both on private grounds and on the outer edges of sidewalks. Some streets are almost completely over-arched with forest trees. Formerly, in the French quarter, trees were planted on the street side of the gutter, but this practice no longer exists.

Several of the wider streets have two distinct roadways, separated by broad grassed places known as "neutral grounds", for the reason that most of them were originally the boundaries of distinct *faubourgs*, or municipalities. These are planted with forest trees, sometimes with three continuous rows forming a double avenue. These avenues have quite generally been appropriated for street-car routes, with the effect of relieving the roadways of the inconvenience of car tracks, and preventing the wear and tear of the track by ordinary street traffic.

There are 13 of these neutral grounds, several of which are traversed in the whole or a part of their length by open draining canals.

A late report of the city surveyor shows the number of trees in these places and in the public squares to be 5,027, which is but a small fraction of the trees in the city, the vast majority of which are planted and maintained by private owners.

Street construction work is generally done by contract, and repairing by the day, all new work being given out by contract under careful specifications, the payment of the contractor being dependent on a proper execution of the work. For repairing and cleaning streets and bridges and removing garbage the system of day's work is preferred, owing to the difficulty of holding contractors to its proper execution. Both plans have been tried, and the contract system proved an utter failure.

STREET RAILROADS.

In the following statement there are included two lines of road, using steam dummies exclusively, running to different points on lake Pontchartrain, and one line using steam dummies on a part of the road to Carrollton.

All termini are within the city limits. The total length of all roads is equal to 140 miles of single track. Total number of cars, 373; of which 313 are horse cars, and 60 small passenger coaches; total number of horses (mules), 1,641; total number of steam engines, 20; total number of men employed, 671; total number of passengers carried during the year (number of fares taken), 23,716,327.

The rate of fare on horse cars is 5 cents, and on the steam trains to the lake 15 cents to go and return.

There are no omnibus lines on fixed routes, only one small line for the accommodation of railroad and steamer passengers, which employs 7 omnibuses, 5 wagons, 14 men, and 25 horses. The total number of persons carried during the year is about 6,000, and the rate of fare 50 cents.

WATER-WORKS.

The water-works were originally built by the Commercial Bank of New Orleans, in 1836. They were purchased in 1869 by the city, and bonds were issued in payment therefor. In 1878 a charter was granted by the legislature, incorporating the New Orleans Water Works Company, and April 10, 1878, the entire property was deeded by the city to this company.

The total cost is given as \$1,250,000. The water is taken from the Mississippi river in the upper part of the city, and is pumped into the mains and stand-pipe, under an extreme head of 150 feet, the usual head being from 80 to 90 feet.

The distribution is through 71 miles, mainly of cast-iron pipe, varying from 36 inches to 3 inches in diameter.

The average amount pumped daily is 8,000,000 gallons; the greatest, 11,000,000 gallons; the least, 7,000,000 gallons. The average cost of raising 1,000,000 gallons 1 foot high is 11 cents. The yearly cost of maintenance, aside from the cost of pumping, is \$20,000. The yearly income from water-rates is \$91,000. No water-meters are used.

There has been as yet no provision made for the settling or filtration of the water, and the deposit of sediment in the pipes during the six months of high water, frequently prevents the free working of the smaller mains.

WATER-WORKS COMPANY.

The following is taken from the annual report of the New Orleans Water Works Company, April 10, 1880:

The New Orleans Water Works Company, as reorganized, has a capital stock of \$2,000,000, and has issued bonds to the amount of \$182,500. Its capital is invested in the works, which were purchased from the city. Its improvements have cost, up to April 9, 1880, \$185,256 52. Its receipts for the year ending April 9, 1880, for water-rates, were \$91,339 63. It expended for improvements in the works during the year ending April 9, 1880, \$178,744 63, and for ordinary running expenses, \$20,987 68.

The amount of water pumped (from the Mississippi river) during the year ending April 9, 1880, was 3,054,762,000 gallons. The coal consumed in this service was 31,734 barrels. Prior to the improvements the service-pipes throughout the city were not only too small for the efficient distribution of water, but they had become so filled with silt deposited by the muddy river-water that their original efficiency was very much reduced, and in some instances entirely destroyed. Some of this obstructing deposit has, since the improvement of the pumping-works, been forced out by flushing under a strong head, so that pipes in the lower part of the city, formerly nearly or quite useless, have been restored to their full efficiency.

The pipes laid in the course of the improvement to April 9, 1880, are:

	Feet.
36-inch	2,325.5
30-inch	9,052.3
20-inch	2,168.5
12-inch	3,751.0
8-inch	13,454.6
6-inch	7,686.5
Total (7.28 miles)	<u>38,438.4</u>

Since the date of the report the pumping-works and stand-pipe have been completed, the service is much improved, and the use of the water is rapidly extending.

The most important remaining need of these works is an arrangement for the supply of water clarified by settling in basins. It is thought that the demand and the financial condition of the company will not at present justify this work. When the improvement shall have been made it is proposed, in order to flush the gutters of the perpendicular streets, to set aside for that purpose pipes not needed for the general distribution, and to send through them water pumped directly from the river without settling.

Experience with the New Orleans water-works indicates the advisability of removing cement and iron pipes, where these were originally laid, and substituting pipes of cast iron.

GAS.

The gas-works are owned by a private corporation. Daily average production, 598,000 feet. Rate, where consumption is less than 500 feet per month, \$3 per thousand; where 500 feet or more, \$2 70 per thousand feet.

The city pays \$13 88 per annum each for street lamps, of which there are 3,600.

The income from rates is \$505,825 79.

PUBLIC BUILDINGS.

The buildings owned or occupied by the city for municipal uses are the city hall and court-house, opposite Lafayette square; court-house opposite Jackson square; court-house in the fifth district; court-house in the sixth district; second judicial court, Carrollton; house of the aged and infirm; boys' house of refuge; mortgage office; workhouse; parish prison, and insane asylum.

The total cost of the municipal buildings belonging to the city is about \$500,000.

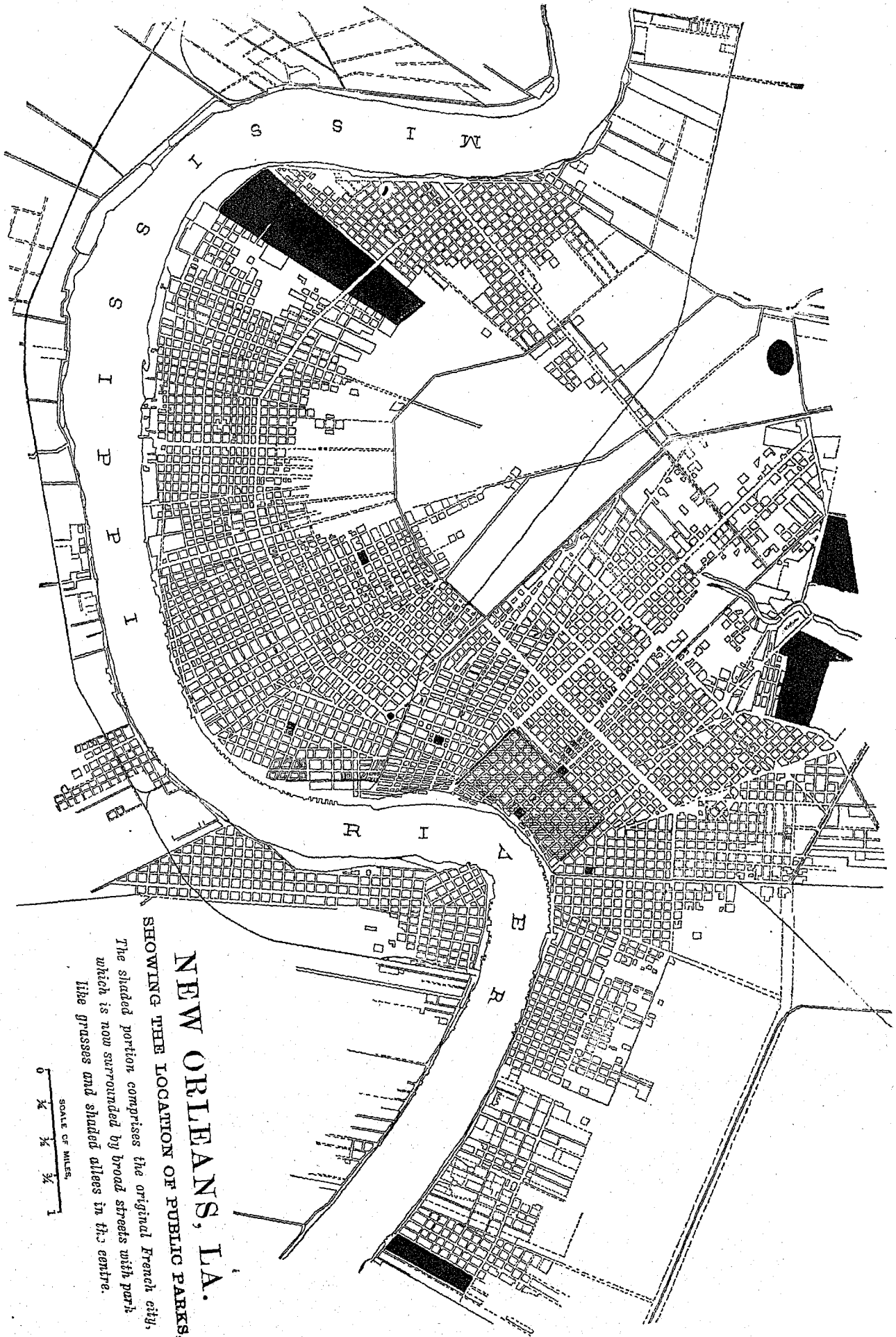
The original contract price of the city hall was \$120,000.

Mr. Cable appends the following note to his report: "No printed list of the municipal buildings, giving their original cost, is known to be extant, and the imperfect condition of the city archives, consequent upon various periods of disorder and neglect, especially that of the late war, make it improbable that any search among them would yield a list of undoubted accuracy."

PUBLIC PARKS AND PLEASURE-GROUNDS.

The total area of the public squares inclosed and within inhabited limits is 659.42 acres.

On Metairie ridge, in the rear of the second district, between Ursuline and St. Louis streets, a tract of 175 acres has been for many years set apart as a public park. It is covered with a natural growth of majestic live-oaks. It remains, thus far, very much in a state of nature. The question of its further adornment and utilization for



NEW ORLEANS, LA.

SHOWING THE LOCATION OF PUBLIC PARKS.

The shaded portion comprises the original French city, which is now surrounded by broad streets with park-like grasses and shaded alleys in the centre.

SCALE OF MILES.
0 1/4 1/2 3/4 1

pleasure purposes would involve an arrangement for the drainage of the area and its neighborhood such as no administration of the city government has ever felt justified in undertaking. It is roughly fenced in, and is in charge of an unpaid keeper, "who finds his remuneration in using it as a cow-pasture."

In 1871 there was acquired, through the action of a commission appointed to purchase land suitable for a city park and for the site of a state-house, a tract of 250 acres of unimproved land, with a frontage of 2,423 feet on the left bank of the river, $5\frac{1}{2}$ miles above Canal street by the course of the river, and extending to St. Charles avenue, with an average depth of 5,580 feet, about 4 miles above Canal street by that road, and with a frontage on that avenue of 1,621 feet. It has a uniform fall from the river bank of about 8 feet to the mile. Excepting a very fine avenue of live-oaks, near the river, it is destitute of trees, and in its present condition is simply an expanse of inclosed common.

The cost of this city park, now being paid, was \$800,000. No appropriation has ever been made for its improvement.

The total cost of the public parks cannot be ascertained. With few exceptions, the smaller public squares were laid off by the persons who owned the surrounding land and divided it into town lots; these have generally become public property by donation.

The lower city park, on Metairie ridge, was expropriated at a valuation of \$40,880 from the estate of John McDonough, the cities of New Orleans and Baltimore being equal heirs to the greater part of that estate, which included this tract. Baltimore abandoned its undivided half to New Orleans in payment of taxes.

No outlay is made for the maintaining of the larger parks; the smaller public squares receive, however, a certain amount of attention. All are nominally under the control of the administrator of police.

Jackson square, in front of the Cathedral, the old Place d'Armes, is well kept and much frequented, and, with its wealth of orange trees and other sub-tropical vegetation, is extremely attractive. It is closed at night, and has a day and a night watchman and a gardener.

There are no ordinances relating to the control of the parks.

PLACES OF AMUSEMENT.

New Orleans has five theaters:

	Seating capacity.
Grand opera-house, Canal street	1,800
French opera-house, Bourbon street.....	2,000
National theater, Perdido street	1,600
St. Charles theater, St. Charles street	3,000
Academy of Music, St. Charles street.....	2,200

Theaters pay to the city a license fee of \$250, and to the state of \$500. In addition to this they pay to the charity hospital, in accordance with a stipulated provision, as follows:

SECTION 397. For every public ball or concert, the sum of ten dollars shall be paid to the treasurer of the hospital; and annually, for each theater, one hundred dollars; for each circus, one hundred and fifty dollars; for every menagerie, fifty dollars; for every show, twenty-five dollars. And it shall be the duty of the mayor of the city of New Orleans, in authorizing any of these exhibitions, previously to require the receipt of the treasurer of the hospital for the payment of the said sums respectively, and in case he should issue any license without such receipt the city of New Orleans shall be liable therefor.

Grunewald hall, in Baronne street, occupies the upper portion of a large building erected in 1874. It has a seating capacity of 1,000, and is provided with the conveniences and appurtenances of a concert hall of the better class, including a stairway at each of the four corners for escape to the ground in case of fire.

Odd Fellows' hall, on Lafayette square, is a well-appointed music hall, with a seating capacity of 1,000.

Masonic hall, in St. Charles street, at the corner of Perdido street, has a seating capacity of 1,200.

There are no concert or beer gardens properly so-called or paying license as such. The two steam railways leading from Canal street to lake Pontchartrain and terminating, one at West End, at the mouth of the New Canal, and the other at Spanish Fort; at the mouth of the bayou St. John, have been made favorite places of resort.

At West End a promenade and a shell-paved carriage-drive have been made on the ground of the protection levee for a length of about half a mile. The ground has been neatly dressed, about 1,000 trees have been planted, and pagodas have been built. The establishment includes a hotel and restaurant. There is an open-air instrumental concert every evening except in winter. The rowing club and the yacht club have erected convenient houses at the end of the canal, and hold their regattas in the mouth of the canal or on the lake. This resort is also approached by the shell roads of Canal street, Carrollton avenue, and the New Canal, which are favorite carriage routes. The improvements are now substantially completed, and have cost about \$75,000.

At Spanish Fort the improvements are of much the same character, but somewhat more elaborate. A garden has been laid out, where beer is served, and there is a display of fireworks on Saturday nights. These improvements, which are but partially completed, have cost thus far about \$55,000.

During eight months of the year, omitting the winter months, both Spanish Fort and the West End are nightly patronized by thousands, including those of all classes of society and of both sexes. Each occupies an area of about eight acres.

DRAINAGE.

The drainage of New Orleans is of the most ineffective and simple character, adapted solely to the removal of surface-water from the streets and house-lots. The whole vast area of the city, except the elevation along the bank of the river and its inland slope and a few trifling elevations like Metairie ridge, is naturally a marsh so far as its frequent submersion is concerned, though not bearing a vegetable soil of great depth. It has been made substantially dry by a rude adoption of the Polder system of Holland; that is to say, it is inclosed by protection levees or dikes at the upper and lower boundaries and along the lake and the canals, the river front being protected by an artificial elevation of the natural shore. The floods against which it has to be protected are of three sources: first, the rise of the river to such a height as to overflow the levee in part of the city, and this even now requires at times vigilant attention; second, the flood occasionally caused by crevasses in the levees above the city, and assailing the upper protection levee; and third, the piling up of the waters of lake Pontchartrain from the long continuance of strong north or northeast winds, forcing the water into the canals and overflowing their banks or the protection levee on the lake shore.

During floods the water of the river rises to a height of 10 or 12 feet above the general level of the back lands of the city. The same cause, acting through a crevasse of the levee above the city, would produce a flood of varying height, according to the capacity of the opening and the level of the river. The level of lake Pontchartrain is substantially the level of the sea, but the accumulation of its waters along the south shore and in the canals sometimes reaches, owing to the influence of protracted winds, several feet above that level.

Without artificial aid the great level plain of New Orleans would be flooded by the rains falling upon it and running to it from the river slope, and by the large volume of the artificial water-supply of the city, none of which has any other means of discharge. The artificial aid is given by the use of three "draining-machines" situated at the rear of the city, one at Dublin avenue, one at the beginning of bayou St. John, and one at London avenue. These are the old Dutch paddle-wheel pumps, revolving vertically and forcing the water from the canal behind them to the higher level of the canal beyond them. They are driven by steam, and as their capacity is considerably beyond the dry-weather needs they work only intermittently and moderately, except during storms, when their full force is not adequate to the complete removal of the torrent. The water is led to these machines by open draining canals, which penetrate the city at different points, and which accumulate the flow of the intermediate territory by cross canals. The rapid removal of storm water from the river slope is facilitated by wide and deep gutters which, during the almost tropical downpour that occasionally takes place, deliver such volumes as to overflow the whole territory at the foot of the slope a half mile, more or less, back from the levee.

The gutters of New Orleans are the receptacles of nearly all of the liquid wastes of houses, and become, especially during the summer time, extremely foul. They receive also more or less garbage and rubbish, and, especially the deeper gutters of the streets running back from the river, are subject to very foul accumulations. To remedy this condition the Auxiliary Sanitary Association, during the years 1879 and 1880, established a system of flushing by water taken from public hydrants, and by water lifted directly from the river by a powerful steam-pump erected for the purpose. This has been, so far as these perpendicular streets are concerned, quite effective, but has also had the effect of adding materially to the amount of water to be discharged by the draining-machines.

Up to the present time this constitutes the entire drainage of the city of New Orleans. The soil is saturated almost to its surface, and saturated very largely with the oozings of foul privy-vaults and the infiltration of accumulations on the surface of the streets and in the rear of houses.

Rightly or wrongly, to this condition of saturation and filth the notorious insalubrity of the city, in winter as well as in summer, is mainly ascribed. The charge gains presumptive force if we accept Dr. Bowditch's theory as to the relations between soil-moisture and consumption. A careful sanitary survey of the city, made by the Auxiliary Sanitary Association in 1879, gives the following classification of the causes of mortality during that year—a year when yellow fever was prevented from becoming epidemic only by the most strenuous efforts of the association to secure the careful policing of the ground and the general disinfection of the city:

Causes of death in 1879.

Yellow fever.....	19
Malarial fevers.....	209
All diarrheal diseases.....	376
Trismus nascentium and tetanus.....	236
Diphtheria.....	61
Scarlet fever.....	1
Consumption.....	824
All other diseases.....	3,396

This city has been peculiarly subject to epidemics of yellow fever, cholera, and dengue (break-bone fever), all of which are believed to be especially virulent in such a climate, under the influence of a foul and moist condition of the ground.

A discussion of the question of the drainage of New Orleans would not be complete without a description of the present project for its improvement, so far as that project has received the indorsement of legislation and has been made at least a potential fact.

As the financial burdens of the city are already a great embarrassment, and, to a certain extent, a bar to its prosperity, it was deemed unwise to propose any scheme which would call for the expenditure of public money, and the hope was expressed that the work of sewerage and drainage might be accomplished by private enterprise. With this view the legislature of Louisiana authorized the incorporation of associations for sewerage and drainage, to be chartered for a period of 99 years; it authorized municipalities to consent to the construction of works of drainage, sewerage, and land reclamation through the streets of any incorporated city or town; "and such council giving such consent to any corporation formed for the purposes of drainage, sewerage, and land reclamation may, in the interest of public health and cleanliness, pass all needful ordinances and bills and regulations to make effective the plan of sewerage and drainage it may so adopt with reference to all houses and lands within the municipal limits." The further provision was also made that "any corporation established for drainage and sewerage and land reclamation may, by contract with the owner of real property, duly recorded, have a privilege on said property for the price and value of work done and facilities furnished".

Under these provisions the "New Orleans Drainage and Sewerage Company" was organized early in 1880. On the 12th of April, 1881, the council adopted an ordinance providing for a contract between the city and the company, of which the following is the text:

AN ORDINANCE to provide for a contract between the city of New Orleans and the New Orleans Drainage and Sewerage Company, to provide for the effective operation of the plan so adopted, to establish certain police regulations in regard to drainage and sewerage, and to define and punish violations of such regulations.

SECTION 1. *Be it ordained by the city council of New Orleans*, That the mayor be, and he is hereby, authorized and directed to enter into a notarial contract with "The New Orleans Drainage and Sewerage Company", a company organized under the laws of Louisiana, and domiciled in New Orleans, and whose charter was established by act before N. B. Trist, notary public, passed March 17, 1880, which contract shall embrace the following stipulations, and such others as may be necessary and proper to carry them into effect:

1. Giving the said company the right during the term of its said charter to lay and maintain sewers and drains in the streets and through the public places of the city of New Orleans, and other places hereinafter named, at a depth in said streets of not less than four feet; the house branches to be nowhere less than two feet below the surface, and proper house branches to be furnished in connection with each main sewer pipe in any street to the inside banquette line of each inhabited house, or through alley-ways or other passages to the rear lines of property, and also to a point within premises where a house now exists, and connections may be made as hereinafter provided. The sewer pipes so laid to be water-tight and adapted to receive the fecal matter, household wastes; slops, drainage from bathtubs and the like, but not storm water, which is intended to pass off, as now, by gutters and canals; and each sewer is to be furnished at the head with an automatic flush-tank. The system to be substantially that which has been adopted and put into operation during the last year in Memphis, Tennessee, except so far as modified by mutual consent. The said company shall be bound to keep its street sewer-pipes in good order and free from obstructions. The said company shall be bound to restore the streets and banquettes, after laying pipes, to their previous condition within a reasonable time; and its neglect or refusal to do so, after notice from the department of improvements, shall subject it to a penalty of \$25 for each day and place, after notice given, to be recovered before a competent court. If said work of restoration be not commenced within 24 hours after notification from the department of improvements, the said work may be done by the said department of improvements at the expense of the company.

2. Authorizing and requiring said company to lay, in connection with said system of water-tight sewer-pipes, a system of porous draining tile-pipes, such as are used for agricultural underdraining, for the purpose of underdraining the soil of streets and other places where they may be laid and removing therefrom subsoil water.

3. Providing that said sewerage pipes and subsoil drainage tiles shall terminate, at some point or points to be agreed upon, into a receptacle or receptacles, in such a way as to give the same facilities of discharge as would exist if they discharged into a natural low outlet, the same to be pumped into the Mississippi river below low-water mark; but the subsoil waters from the drainage tiles may be received into a separate receptacle and pumped into the city draining canals, at the option of the company. Said receptacle or receptacles to be kept pumped down to a proper low level.

4. Providing that said company shall receive into its said sewerage pipes, free of charge to the city, the sewerage matter from all public buildings of the city, from all the public-school buildings owned by the city, and all charitable institutions that are not self-sustaining: *Provided*, That said buildings are situated on the streets in which the said sewerage pipes shall be laid in accordance with the provisions hereinafter set forth and proper service-pipes furnished by the city or other owners of such property.

5. Providing that the said company shall begin its operations in the territory bounded by Louisiana avenue on the upper side, by Enghien street on the lower side, by Rampart street to Washington avenue and thence by Carondelet street on the west side, and by the Mississippi river on the east side; shall commence its surveys within six months after the execution of said contract, and shall complete at least one-fifth of its work in said territory in each year thereafter for five years: *Provided*, That no period during which said company shall be prevented from carrying on its operations by injunction, overflow, order of the board of health, or epidemic, shall be calculated as a portion of said period.

6. Providing that in consideration of the laying of said porous draining tiles and the extending of sewerage facilities free of charge to said public buildings, and in consideration of the public health and convenience, and the great expense which will be incurred and risks taken in the building of said system, and in consideration of the right vested by this agreement in the city to purchase the said works, the city of New Orleans will not adopt any other system of sewerage during the term of (25) twenty-five years after the execution of the work under said contract in the territory within named; and the city will at all times, by a proper exercise of its police powers and other powers, protect the pipes and other property of the company from obstruction and injury, and will by every lawful means promote and enforce the adoption and proper use of the system herein provided, and will at all times during the term of said contract provide and enforce the provisions and prohibitions contained in the second section of this ordinance, or their equivalent, with diligence and in good faith.

7. The said company shall, after the completion of its works in said territory, extend the same at the same annual ratio in the other parts of the city, on the left bank of the river, wherever the inhabited houses are not more than fifty feet apart, but it shall not be compelled to pass an interval of more than fifty feet on either side of the street to drain a closely built area beyond; and the company may, at its option, extend its lines anywhere within the present limits of the city. It shall not be compelled to accept or to furnish an outlet for any drain or sewer not of its own construction, nor unless the fixtures used in the house shall have been approved by it (its

approval or refusal to approve being subject to the sanction of the state board of health, whose decision shall be final) as of safe and proper construction; nor to accept any connection with any property until its owner shall have executed the contract contemplated by section second of act No. 125 of 1880, providing for securing the proper compensation to the company by privilege and servitude.

8. Providing that the said company shall not charge for the facilities furnished to any house for sewerage and drainage in excess of the following sums:

For dwelling-houses not exceeding 4 rooms, for all connections, per month, 85 cents.

For dwelling-houses having 5 or more rooms, but not exceeding 8 rooms, for all connections, per month, \$1 20.

For dwelling-houses having 9 or more rooms, but not exceeding 13 rooms, for all connections, per month, \$1 60.

For dwelling-houses having 14 or more rooms, but not exceeding 16 rooms, for all connections, per month, \$1 85.

For dwelling-houses having 17 or more rooms, but not exceeding 20 rooms, per month, \$2.

For store and office buildings of 4 or more stories, for all water-closet connections, per month, \$1.

For each additional connection, 30 cents.

For store and office buildings of 3 stories, for all water-closet connections, per month, 85 cents.

For each additional connection, 30 cents.

For store and office buildings of 2 stories, for all water-closet connections, per month, 70 cents.

For each additional connection, 30 cents.

For store and office buildings of 1 story, for all water-closet connections, per month, 50 cents.

Stores not exceeding 2 stories in height, occupied by the family of the dealer, may be considered as dwelling-houses.

Stores and office buildings having more than 30 feet front or more than 120 feet depth may be charged sums proportionately greater.

Houses exceeding 20 rooms, hotels, factories, stables, warehouses, cotton-presses, and similar buildings to be charged pro rata rates to be fixed by agreement, and in case of dispute by arbitration.

These rates to be due and payable in advance for each calendar month.

If payment thereof be made on or before the last day of the month for which so due, the company to grant a discount, or rebate, of not less than 20 per cent., and for the balance give a receipt in full. If the dues are paid annually in advance, the discount shall be 30 per cent.

Wherever the said company shall lay its sewer pipes and tile drains at its expense from the inside banquet line to the place within the premises where the house connections are received, the proprietor may pay for the same the actual cost, either at once or in such installments as may be agreed on, or, in lieu of such payment, 8 per cent. per annum on the cost of such pipes and drains may be added by the company to the charges for furnishing sewerage and drainage facilities to the building as hereinbefore and hereinafter fixed.

The said company shall further agree in the said contract to make an annual rate of dwelling-houses which, if paid strictly in advance at the office of the company, shall not exceed, exclusive of such charges or installments, or percentage for service-pipe and subsoil drains, the following sums:

For dwelling-houses not exceeding 4 rooms, for all connections of every kind, per annum in advance, \$6.

For dwelling-houses having 5 or more, but not exceeding 8 rooms, for all connections of every kind, per annum in advance, \$9.

For dwelling-houses having 9 or more, but not exceeding 13 rooms, for all connections of every kind, per annum in advance, \$13.

For dwelling-houses having 14 or more, but not exceeding 16 rooms, for all connections of every kind, per annum in advance, \$16.

For dwelling-houses having 17 or more, but not exceeding 20 rooms, for all connections per annum in advance, \$17.

But said company shall not be required to receive into its pipes or drains any storm water or surface water.

Said rates shall be payable in all cases by the owner of the property in absence of agreement to the contrary.

9. The city to have the privilege at any time after 20 years to buy the company's works for cash or its equivalent, at an appraised value to be fixed by 4 appraisers, 2 to be appointed by the city, and 2 by the company, and in case of disagreement, a majority of said appraisers shall call in a fifth person.

10. The said company, on the execution of said notarial contract, shall give its bond in the penal sum of \$50,000, conditioned as the law directs, for the faithful performance of the work called for by the contract.

SECTION 2. *Be it further ordained, &c.,* That the following police regulations for the purpose of promoting the health, comfort, and convenience of the inhabitants of New Orleans with respect to the works of the New Orleans Drainage and Sewerage Company and the system of sewerage to be constructed by it, which is hereby adopted, and to protect and enforce said system, are hereby enacted and established:

1. It shall be unlawful for any person to obstruct or injure the pipes, drains, works, or machinery of the said company.

2. It shall be unlawful for any person to drop or throw into any sink, water-closet, bath-tub, vessel, or drain connected with the pipes of said company, any substance which may obstruct or injure the same, or to use the said pipes to carry off storm water or any natural surface drainage.

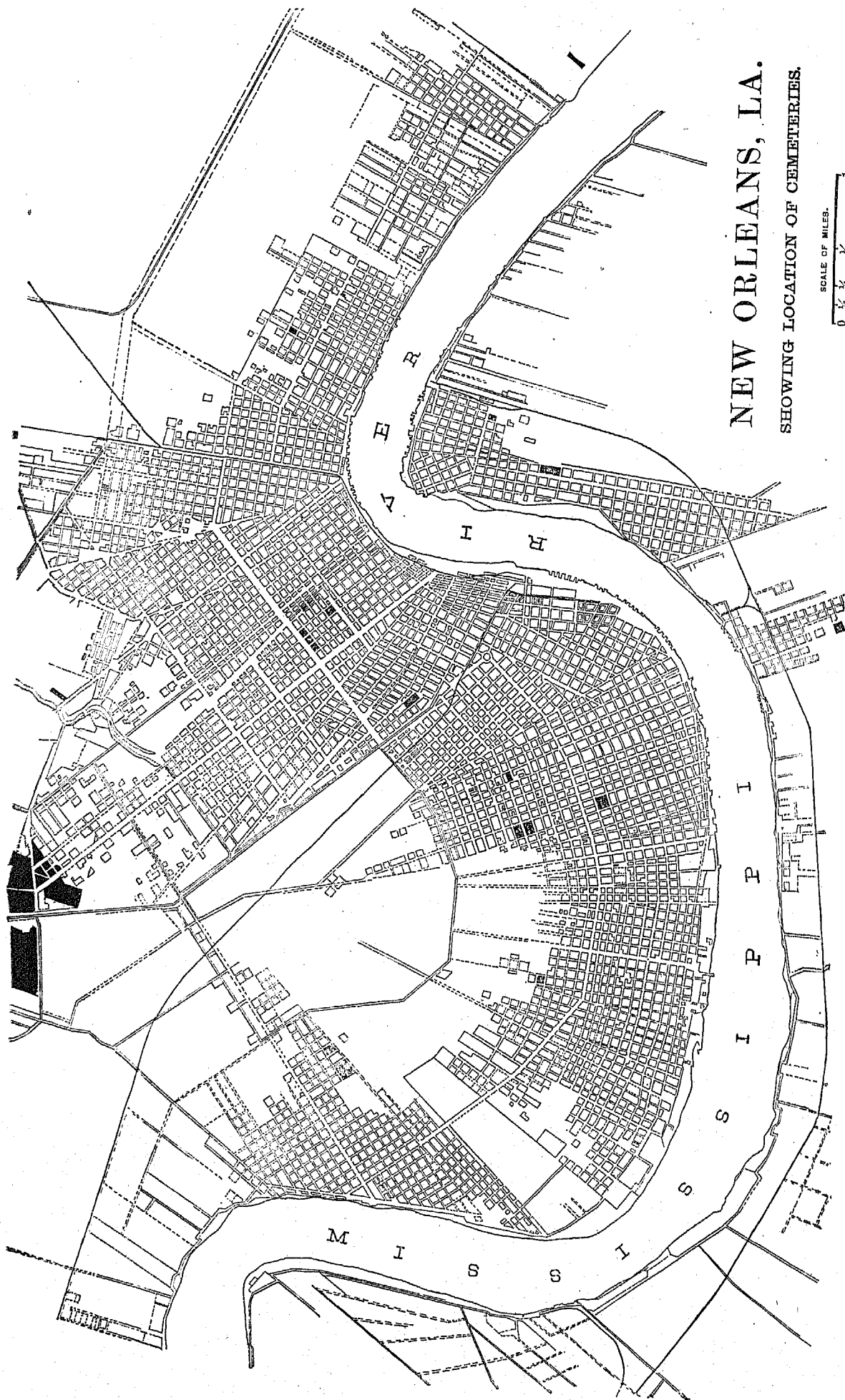
3. Whenever, in any street or part of a street of said city, the said company shall have laid its sewer-pipes and shall be ready to receive therein sewerage matter from the houses and buildings in said street or part of a street, and to remove the same according to the system provided in this ordinance, and notice thereof shall have been given to the occupant of said building, or by advertisement in the official journal of the city, then, and from thenceforth, it shall be unlawful for any privy, water-closet, slop-sink, slop-drain, urinal, or any other similar receptacle for sewerage matter or slops of any kind, to be maintained on said premises, except in connection with said sewerage pipes of the said system of sewerage hereby adopted, during its said term of twenty-five years. Such connections shall be made without delay; and all vaults, sinks, cesspools, drains, and similar receptacles theretofore existing shall be properly emptied, disinfected, and filled with dry earth, river sand, or similar substance, in such manner as the public health may require.

And when in any street said sewerage and drainage facilities shall have been provided as aforesaid by said company, it shall be unlawful from thenceforth to build any privy-vault on any property abutting on such street, or to have, let, or occupy any house on said street without proper water-closet and slop-sink arrangements for connection with said sewers; or to build on said street any house or building without proper water-closet and slop-sink arrangements, and service-pipes and tile-drains for connection with such sewers and subsoil drains, during the term for which said system is hereby adopted.

And any person committing any offense or violating any of the provisions of this section, whether owner, agent of absent owner, lessee, or other person, shall be fined in a sum not less than five nor more than twenty-five dollars, and if the said fine be not paid, shall be imprisoned for not less than five nor more than thirty days.

And each persistence in the violation of the third paragraph of this section, for the space of twenty-four hours after notice, shall constitute a separate offense and violation of this ordinance, and shall be punished by another similar fine and imprisonment; and no punishment for one violation of this ordinance shall bar or prevent prosecution for another violation as herein defined.

Adopted April 12, 1881.



NEW ORLEANS, LA.

SHOWING LOCATION OF CEMETERIES.

SCALE OF MILES.
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It is proposed under this contract to construct a main sewer 6 feet in diameter along Rampart street, from Esplanade street as far as Washington avenue, having a very slight fall, and being, generally, at a depth of 13 feet below the surface of the street. This will give a total fall, from the surface of the levee to the center line of the main sewer, of about 23 feet. Into this main, sewers adapted for the removal of household and manufacturing wastes only, and subsoil drainage-pipes for the removal of soil water, will deliver. At the lower end of the main at about the corner of Esplanade and Rampart streets, there will be located a pumping station with a capacity of 30,000,000 gallons per diem, to deliver the entire flow through an iron force-main laid under Esplanade street, entering the Mississippi river below low-water mark. This arrangement will have practically the effect of raising the city at least 10 feet above its present level, so far as sewerage and subsoil drainage are concerned.

The scheme also contemplates a considerable re-enforcement of the protection levees at the north and south city lines and along the lake and canals; the deepening of the drainage canals, and the constant pumping of the natural drainage, so as to reduce the water-level from 6 to 10 feet below the surface of the whole swamp between the city and the lake.

CEMETERIES.

There are in the city 31 public and private cemeteries and burial grounds, as follows:

St. Louis Cemetery No. 1.—North Basin, North Liberty, Conti, and St. Louis streets.

St. Louis Cemetery No. 2.—Bounded by Customhouse, St. Louis, Claiborne, and Robertson streets.

American Cemetery, or St. Louis Cemetery No. 3.—Located in second district, size 1 square, bounded by North Basin, St. Louis, Conti, and North Liberty streets.

Lafayette Cemetery No. 1.—Located in fourth district, size 1 square, bounded by Washington avenue, Prytania, Coliseum, and Sixth streets.

Lafayette Cemetery No. 2.—Located in fourth district, size 1 square, bounded by Washington avenue, Sixth, South Basin, and St. David streets, 350 feet front on each street.

Valence Street Cemetery.—Located in sixth district, size 1 square, bounded by Valence, Bordeaux, Rampart, and Dryades streets.

Carrollton Cemetery.—Located in seventh district, size 4 squares, bounded by Adams and Lower Line, Seventh, and Eighth streets.

St. Joseph Cemetery.—Located in fourth district, size 2 squares, bounded by Washington avenue, St. David, South Liberty, and Sixth streets.

St. Vincent Cemetery.—Located in sixth district, size 3 squares, bounded by St. David, Green, and St. Patrick streets.

Locust Grove Cemeteries Nos. 1 and 2.—Located in fourth district, size 1 square each, bounded by Locust, Freret, Sixth, and Seventh streets. Sometimes called "Potter's Field".

St. Vincent de Paul Cemetery.—Located in third district, size 1 square, bounded by Louisa, Piety, Urquhart, and Villeré streets.

Girod Cemetery.—Located in first district, size 250 feet wide and 400 feet deep, bounded by South Liberty, Perillat, Cypress, and Magnolia streets.

Holt's Cemetery.—Located in first district, size 5 to 6 acres.

Hebrew Cemetery.—Located on Elysian Fields, near Gentilly road, size 1 square.

Hebrew Cemetery, "Dispersed of Judah."—Located on Canal street, between Anthony street and Metairie ridge, size 250 feet square.

The Polish Hebrew Cemetery.—Located on Canal street, opposite the one last named. Sometimes called "Jewish Rest".

Hebrew Cemetery.—Located in sixth district, on Joseph street, known as "Hebrew Place of Prayer", size 1 square.

German Hungarian Lutheran Cemetery.—Located on Canal street, between Anthony and Bernadotte streets, size 1 square; 4 lots only made for burial, rest cultivated.

Odd Fellows' Cemetery.—Located on Canal street and Metairie road, size 360 feet square.

Charity Hospital Cemetery No. 1.—Located on Canal street, between Anthony street and Metairie road. Exclusively for burials from Charity Hospital; size 200 feet wide, and 1,600 feet long.

Charity Hospital Cemetery No. 2.—Located on Metairie road, between Bienville and Canal streets, size 1 square.

Masonic Cemetery.—Located on Bienville street, between Metairie ridge and Anthony streets, size 3 squares.

St. Patrick Cemetery No. 1.—Located on Canal, between Anthony street and Metairie ridge, size 400 feet wide, 1,500 feet long.

St. Patrick Cemetery No. 2.—Located on Canal, between Anthony and Metairie road, opposite No. 1, size 1 square.

St. Patrick Cemetery No. 3.—Opens from No. 2. Located on Metairie road between Canal and Bienville streets, size 2 squares.

The Freeman's Cemeteries.—Known as Cypress Grove Nos. 1 and 2, and Greenwood. Located on Metairie ridge and Canal street.

Metairie Ridge Cemetery.—Located on Metairie ridge and the New Canal, size 108 acres.

Chalmette National Cemetery.—One mile below barracks, on river. For burial of Union soldiers.

Olivier Cemetery.—Located in sixth district, corner of Verret and Market streets.

St. Bartholomew Cemetery.—Located in fifth district, bounded by De Armas, Lasseyrusse, Franklin, and Hancock streets.

William Tell Cemetery.—Located in Gretna, Tenth street, between Lavoisier and Nerota streets.

There is no interment in church-yards.

The Hebrew Cemetery, belonging to the Hebrew Association, opened in 1828, was closed to interments in 1866. The following are the annual interments for a period of 14 years:

Year 1867 (yellow-fever epidemic)	9,456	Year 1874.....	6,798
1868	4,338	1875.....	6,117
1869	6,001	1876.....	6,257
1870	7,391	1877.....	6,708
1871	6,059	1878 (yellow-fever epidemic)	10,318
1872	6,122	1879.....	5,122
1873	7,505	1880.....	5,623

The following is the practice concerning interments: In most of the cemeteries lots are sold to private purchasers wherein to build tombs or to dig graves. These are the private property of the purchaser and his heirs. The fees for interment, which are appropriated to the cost of maintaining the cemetery, are, for each opening and closing of a tomb or vault, from \$3 to \$5. Burials usually take place within 24 hours after death, but this time may be extended when circumstances require it. Except the destitute, buried at public expense, only Israelites are interred under ground. Graves are dug from 3 to 4 feet deep, except at the cemeteries on Metairie ridge, where, the ground being higher than in other parts of the city, it is possible to dig to a depth of 7 feet. All other interments are made in vaults of brick, stone, or iron, which are built on the surface of the ground. In some of the cemeteries the removal of bodies is not allowed until one year or more after interment.

A certificate, signed by the medical attendant or the coroner, stating the cause of death, with other particulars, is required by law as a pre-requisite to interment; these must be registered with the state board of health. The board also grants permits to bring bodies into or to remove them from the city, and to open tombs.

In "St. Joseph's Cemetery" benefit of interment is bestowed upon "St. Joseph's Orphan Asylum", and ordinary burials must be paid for every 5 years, at the risk of losing the right of burial. In the Hebrew Cemetery, "Dispersed of Judah," as in the other Hebrew cemeteries, all interments are made in graves, since this sect never disturbs the dead, nor buries two persons on the same spot. A certain portion of this cemetery is reserved for suicides.

In the Masonic Cemetery the sexton's fees are devoted to improvement and embellishment. The sale of lots is here restricted to Masons—though their heirs may retain ownership even if not Masons. The grounds in this and most of the other cemeteries are planted with trees, shrubs, and flowers, and are well kept.

In St. Patrick's Cemetery No. 1 permission for interment must be obtained from the Catholic priests, and the burials are mostly limited to poor Roman Catholics.

The Cypress Grove cemeteries belong to the Firemen's Charitable Association. Here no tombs, vaults, or graves are to be opened for interment or removal except on the written order of the treasurer of the association. All building materials must be removed within a specified time after the completion of work. A portion of each cemetery is set apart for colored persons. These cemeteries are laid out in regular walks and avenues, and are well planted and kept.

Greenwood Cemetery contains the monument to the Confederate dead.

Metairie Ridge Cemetery, belonging to the Metairie Ridge Association, was bought at a cost of \$175,000, and \$171,000 were expended in improvements, such as broad shell walks, carriage roads, artificial lakes, rustic bridges, flower-beds, and shrubs. The whole grounds are inclosed in a hedge of Cherokee rose. A revenue is derived from the sale of lots and from sexton's fees. The capital stock of the association is \$500,000.

MARKETS.

There are 17 public markets in New Orleans, as follows:

Pillie Market.—First district, Poydras, between Rampart and South Basin streets, contains 100 stalls.

Poydras Market.—First district, Poydras, between Baronne and South Rampart streets, contains 320 stalls.

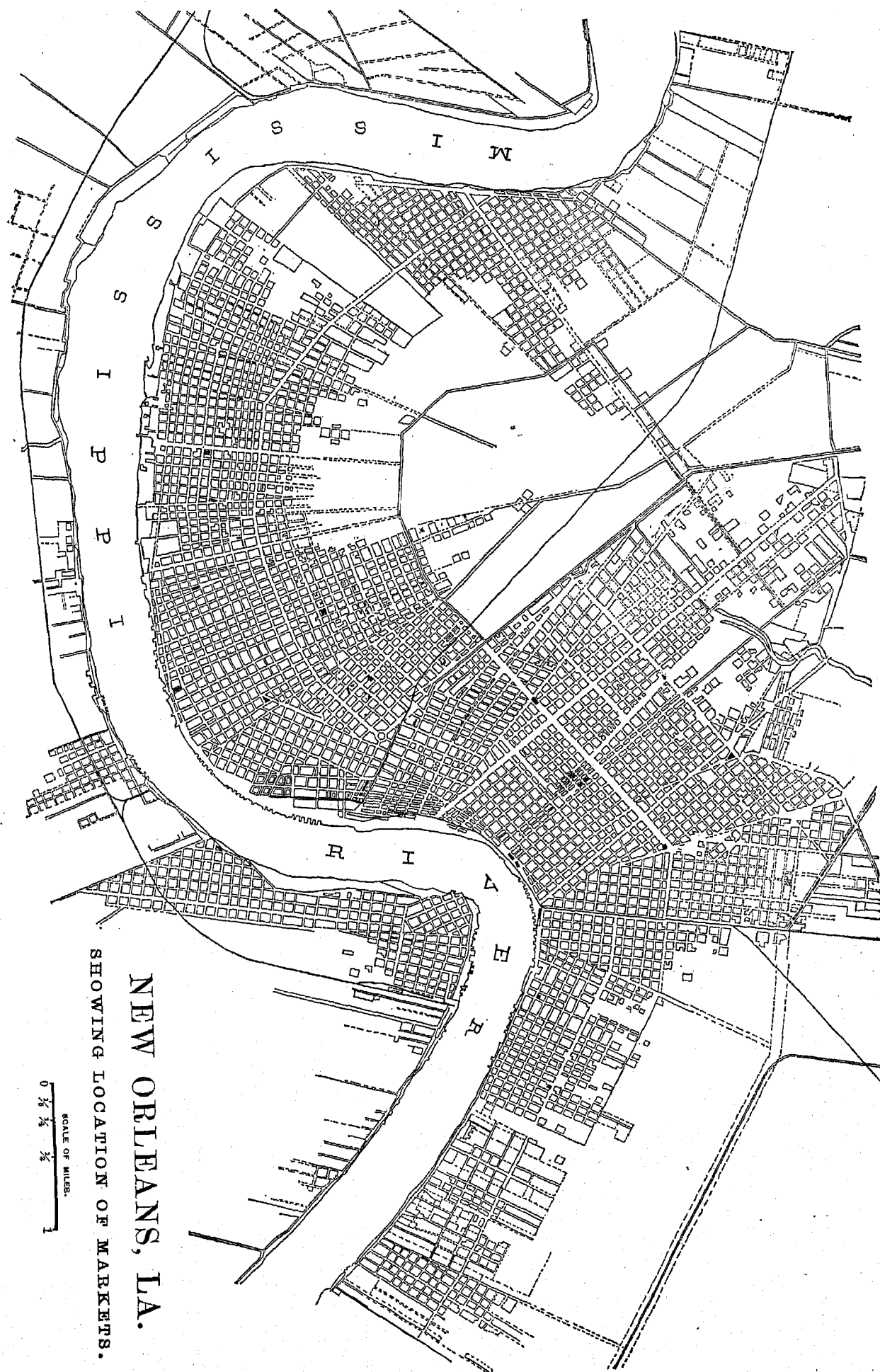
St. Mary's Market.—First district, New Levee and Tchoupitoulas streets, contains 375 stalls.

Dryades Market.—First district, Dryades street, extending from Terpsichore to Thalia streets, spanning Melpomene street, contains 325 stalls.

French (Beef, Fruit, and Bazaar) Markets.—Second district, on North St. Peter and Decatur, extending from St. Ann to Ursuline streets, contain 550 stalls.

Washington Market.—Second district, Chartres, corner of Louisa streets, contains 36 stalls.

Port Market.—Third district, North Peter, between Marigny and Elysian Fields, contains 120 stalls.



NEW ORLEANS, LA.

SHOWING LOCATION OF MARKETS.

SCALE OF MILES.
0 1/4 1/2 3/4 1

St. Bernard Market.—Third district, St. Bernard, corner of North and Claiborne streets, contains 59 stalls.

Claiborne Market.—Third district, Claiborne, between Common and Gasquet streets, contains 66 stalls.

Trémé Market.—Third district, Orleans, between Marias and North Robertson streets, contains 91 stalls.

Second Street Market.—Fourth district, corner Second and Dryades streets, contains 48 stalls.

Keller Market.—Fourth district, Felicity, St. Andrew, Locust, and Magnolia streets, contains 90 stalls.

Soraparu Market.—Fourth district, Soraparu, between Tchoupitoulas and Rousseau streets, contains 72 stalls.

Magazine Market.—Fourth district, between Camp, Magazine, St. Andrew, and St. Mary streets, contains 155 stalls.

Ninth Street Market.—Fourth district, Magazine, between Ninth and Harmony streets, contains 56 stalls.

Jefferson Market.—Sixth district, between Napoleon and Berlin, on Magazine street, contains 30 stalls.

Carrollton Market.—Seventh district, corner Dublin and Second streets, contains 96 stalls.

Around each market there is standing room for from 15 to 25 wagons.

The confused condition of the city archives and early records make it impossible to ascertain the original cost of these markets.

The markets are all let by contract to one person for about \$170,000 per annum; \$8,000 is appropriated for repairs. The gross proceeds of the annual sale of stalls for 1879 amounted to \$280,000.

The stalls are let by the day at the following rates:

	Cents.
Butcher's stall and block.....	50
Each corner table additional.....	5
Each additional foot.....	5
Fish, game, and vegetable stalls.....	15
Coffee stands.....	75
Each additional foot.....	2

The markets are open from 3 a. m. to 12 m.

The public markets are mostly well arranged sheds in streets and public squares. The old French market in the second district is very extensive, and is the most important in the city. On Sunday mornings it displays, better than anything else in New Orleans, the mixed and picturesque character of the population.

Much the larger proportion of the retail supply of meats, poultry, fish, and vegetables is from the public markets, sales from private stores and stands being comparatively unimportant, although there are the following private markets which pay license to the city:

First district.....	21
Second district.....	18
Third district.....	18
Fourth district.....	20
Sixth district.....	8
Total.....	85

The ordinances relating to markets specify the amounts which the contractor, lessee, or "farmer" may charge for various animals sold within the markets, as follows: For every head of horned cattle, 90 cents; every head of veal, mutton, or venison, 25 cents; every head of pork weighing less than 100 pounds, 25 cents; over 100 pounds, 50 cents. They also prohibit the sale of fish or vegetables at the beef market of the second district. Each vendor is required to have his or her name conspicuously placed over stall or stand, under penalty of \$10. All stalls, tables, and stands are to be kept "in the highest state of cleanliness", by daily cleansing, under a penalty of \$5 for each offense. No person can lease more than two stalls, nor sub-lease any stall or stand, under \$50 fine.

Article 606 (10) provides:

If any person shall sell or expose for sale within markets any imperfect or unwholesome provisions, or meat of any animal that died of disease, such provisions shall be seized by the commissary and shall be thrown into the nuisance boat, and the offender shall be fined from \$10 to \$50 for the first offense, and for the second he shall be deprived of vending in any market or of hiring any stall. It shall be the duty of the commissaries of the markets to make daily inspection of meat and all articles exposed for sale, and to enforce strict observance of this regulation.

The sale of intoxicating liquors is forbidden within or on footways surrounding the markets under a penalty of \$10.

All refuse from markets is to be conserved and disposed of as other offal.

SANITARY ORGANIZATION.

The chief health authority having control of the sanitary affairs of the city is the board of health of the state of Louisiana. This is an independent board of 9 members, all of whom may be physicians. At least 1 of the state members and 2 of the city members must be physicians.

The annual expense of the board, when there is no declared epidemic, is \$40,000. Out of this sum the 3

Persons occupying premises:	
White.....	29,050
Colored.....	11,335
Natives of China.....	46
Children registered 1879:	
Males.....	406
Females.....	377
Condition of floor:	
Good.....	7,975
Bad.....	38
Condition of roof:	
Good.....	7,978
Bad.....	35
Condition of privy:	
Good.....	5,481
Foul.....	3,250
Defective.....	239
Vacant lots.....	242
Lots not filled to grade.....	4
Application for building permits.....	4
Private complaints attended to.....	273

Miscellaneous.

Inspections made.....	19,057
Reinspections made.....	3,231
Nuisances requiring abatement.....	3,520
abated.....	3,459
Notices to empty privy vaults.....	3,159
rebuild privy vaults.....	36
repair privy vaults.....	117
disinfect privy vaults.....	3,205
clean premises.....	70
repair houses.....	3
fill lots.....	10
supply water.....	10
construct gutters.....	34
repair gutters.....	26
remove hogs.....	6
Dangerous buildings reported.....	3
Premises disinfected.....	8,013
fumigated (rooms 28, vessels 1).....	29
Persons vaccinated:	
White.....	22
Colored.....	2
Cases of yellow fever.....	3
Persons reported for non-compliance.....	7

THIRD DISTRICT.

Number of premises.....		6,269
dwellings.....	5,810	
manufactories.....	54	
stores and dwellings.....	405	
vacant houses.....	196	
rooms in dwelling-houses.....	28,172	
Persons occupying premises:		
White.....	25,220	
Colored.....	8,567	
Number of premises with cisterns.....		5,661
cisterns and hydrants.....	205	
hydrants.....	143	
wells.....	2,792	
without water supply.....	48	
houses built of wood.....	5,703	
brick.....	566	
premises in good condition.....	6,091	
bad condition.....	178	
privies in good condition.....	4,308	
foul condition.....	1,812	
defective condition.....	1,188	
Children born in 1879:		
White.....	943	
Colored.....	378	

Number of children registered, 1879:		
Male		420
Female.....		429
Number of horses kept on premises.....		453
mules kept on premises.....		525
cows kept on premises.....	1,185	
hogs kept on premises.....		276
vacant lots.....		397
lots not filled to grade.....		20

Miscellaneous.

Number of inspections made.....		6,358
reinspections made.....	1,254	
nuisances requiring abatement.....	1,085	
abated.....	660	
notices served to empty privy vaults.....	1,681	
rebuild privy vaults.....	45	
repair privy vaults.....	50	
disinfect privy vaults.....	1,426	
clean premises.....	25	
fill lots.....	6	
construct gutters.....	2	
repair gutters.....	2	
remove hogs.....	21	
premises disinfected and fumigated.....	14	
cases of yellow fever.....	1	
small-pox.....	1	
diphtheria.....	23	
complaints attended to.....	125	
notices served to supply water.....	7	
applications for building permits.....	22	

FOURTH DISTRICT.

Premises.....	7,387
Premises, with cisterns only.....	7,281
cisterns and hydrants.....	92
wells.....	1,153
without water supply.....	14
Houses built of wood.....	6,861
brick.....	526
used as dwellings only.....	6,129
stores and manufactories only.....	191
stores and dwellings.....	1,067
vacant.....	316
Rooms in dwelling-houses.....	37,761
Persons occupying premises:	
White.....	27,175
Colored.....	6,056
Children born and registered in 1879:	
White.....	534
Colored.....	62
Children born but not registered in 1879.....	341
Condition of premises:	
Good.....	7,201
Bad.....	186
Condition of floor:	
Good.....	7,380
Bad.....	7
Condition of roof:	
Good.....	7,379
Bad.....	8
Condition of privy:	
Good.....	3,127
Foul.....	4,260
Defective.....	2,267
Premises with (549) horses, (953) mules, (522) cows, and (264) hogs.....	653
Vacant lots.....	5,346
Lots not filled to grade.....	375
Applications for building permits.....	23
Private complaints attended to.....	392

Miscellaneous.

Inspections made.....	11,203
Reinspections made, regular	4,198
Auxiliary Sanitary Association	11,094
National Board of Health	10,238
Nuisances requiring abatement.....	244
abated.....	3,959
Notices to empty privy vaults.....	3,708
rebuild privy vaults.....	45
repair privy vaults.....	95
disinfect privy vaults	373
clean premises	186
fill lots	19
supply water.....	8
construct gutters.....	76
repair gutters	50
remove hogs	47
register births of children	341
Dangerous buildings reported.....	1
Building permits issued.....	23
Certificates of vaccination issued.....	50
Premises disinfected altogether.....	21,360
fumigated.....	21
Rooms fumigated and disinfected	68
Cases of small-pox.....	1
Persons vaccinated, white.....	21
Cases of yellow fever.....	34
Persons reported for non-compliance with health ordi- nances	25

FIFTH DISTRICT.

Inspections made.....	1,331
Number square blocks inspected.....	105
running blocks inspected.....	426
vaults disinfected.....	1,331
squares around which lime was distributed.....	109
cart-loads of garbage removed.....	24
Drainage gutters cleaned	7
Trees whitewashed	750
Number feet of fences whitewashed.....	875
Premises sprinkled with lime	61
Number barrels of lime used.....	120
copperas used.....	5

SIXTH DISTRICT.

Premises	3,586
Premises with hydrants only.....	1,009
cisterns.....	2,746
wells	840
Houses built of wood.....	3,495
brick.....	91
used as dwellings only.....	3,110
stores and manufactories only	65
stores and dwellings.....	190
vacant	221
Rooms in dwelling-houses	11,561
Persons occupying premises:	
White	11,236
Colored	4,105
Children born in 1878:	
White	286
Colored	102
Children registered:	
Male.....	127
Female	92
Children born but not registered:	
Male.....	68
Female	101
Condition of floor:	
Good.....	3,586

Condition of roof:

Good.....	3,586
Condition of privy:	
Good	2,422
Foul	1,164
Defective	11
Premises with (391) horses, (337) mules, (1,195) cows, and (368) hogs.....	441
Vacant lots	8,434
Applications for building permits	31
Private complaints attended to.....	207

Miscellaneous.

Special inspections made.....	261
Regular inspections made.....	8,418
Reinspections made, regular	3,231
Nuisances requiring abatement	2,493
abated.....	2,470
Notices to empty privy vaults.....	1,164
rebuild privy vaults	10
disinfect privy vaults.....	139
repair privy vaults	14
clean premises	837
repair houses	6
fill lots.....	3
Water supply in gallons	4,624,400
Number of dairies inspected weekly	91
Notices to construct gutters	19
repair gutters	53
remove hogs	18
Dangerous buildings reported.....	6
Premises disinfected altogether	1
fumigated.....	1
Persons vaccinated:	
White.....	24
Colored	33
Cases of yellow fever.....	1
Persons reported for non-compliance with health ordi- nances	2
Revaccinations:	
White.....	11
Colored	5
Births reported by midwives	146

SEVENTH DISTRICT.

Number of premises inspected.....	1,327
with cistern only	1,318
wells.....	353
no water supply	10
Number of houses built of wood	1,325
brick	2
used as dwellings only.....	1,161
stores and manufactories only	31
vacant	79
rooms in dwelling-houses	4,346
Persons occupying premises:	
White	2,476
Colored.....	2,503
Children born in 1878:	
White	73
Colored.....	15
Children registered:	
Males	38
Females	55
Number of floors in good condition.....	1,327
roofs in good condition	1,327
privies in good condition	1,144
foul condition	184
premises with (100) horses, (12) mules, (241) cows, and (83) hogs.....	129

Vacant lots	2,889	Number of notices to disinfect	59
Lots not filled to grade	1	clean premises	535
Applications for building permits	5	gallons of water supply	1,738,400
Private complaints attended to	65	notices to supply water	10
<i>Miscellaneous.</i>		construct gutters	2
Number of special inspections made	194	premises disinfected	1
inspections made	4,270	fumigated	1
reinspections made	1,650	Persons vaccinated :	
nuisances requiring abatement	920	White	10
notices to empty privy vaults	241	Colored	41
rebuild privy vaults	4	Number of cases of yellow fever	1
repair privy vaults	12	children reported by midwives	4
		dairies inspected weekly	56

When nuisances are reported the localities are visited, and all violations of sanitary ordinances are followed with suitable orders for the abatement of nuisances and the performance of necessary works of improvement.

Four members of the board are appointed by the governor of the state, and five are elected by the city council of New Orleans. It enacts sanitary ordinances, defining nuisances, and providing for their abatement, and, so far as they apply within the city, the enactments must be concurred in by the city council.

The board meets weekly from June 1 to November 1, and monthly from November 1 to June 1.

The following is the practice concerning the inspection and correction of defective house-drainage, privy vaults, and sources of drinking water:

Ordinary inspections are made by the sanitary officers, but in cases of serious complaint or dispute, by the medical sanitary inspectors. Especially important matters are investigated by the president or by a committee of the board. In ordinary cases orders for the abatement of nuisances and minor matters are signed by the sanitary inspector of the district. More important cases are met by an order under the signature of the secretary of the board, with its seal affixed. A neglect to comply with these orders is followed by summary prosecution before the recorder's court. Owners of property may always be required to drain the surface of their lots into the streets. Cesspools are forbidden by ordinance. The board is not distinctly authorized to regulate the quality of drinking water, except to require that it be furnished from a cistern or a hydrant.

The board has no jurisdiction over the drainage or cleaning of streets or nuisances in public places.

The board exercises no control over the conservation and removal of garbage.

Previous to 1877 excrement, garbage, and other waste were dumped into the Mississippi river at various "nuisance wharves", at different points along the city front. Since that date, under the laws of the state of Louisiana, all such matters must be dumped into garbage boats, towed below the limits of the city, and emptied into the middle of the river. An unofficial and voluntary association, known as the Citizens' Auxiliary Sanitary Association, organized in April, 1879, furnishes the necessary garbage boats.

In 1880 this same association established pumping works and equipments for furnishing an abundant supply of water for flushing the gutters of the streets leading back from the river.

The isolation of small-pox patients is not rigorously carried out—often not at all. In the discretion of the board of health, or its officers, such patients may be removed to the hospital or quarantined at home.

Scarlet-fever patients are not isolated or quarantined in any way; neither does the board take any especial control over the breaking out of contagious diseases in public or private schools.

The Luzenberg hospital in the lower part of the city is, by contract between its owner and the city authorities, used as a small-pox pest-house in case of need.

Vaccination is compulsory only as a prerequisite for admission to public schools. It is performed gratuitously by the sanitary inspectors at their offices. Where small-pox occurs vaccination is offered gratuitously to the residents of the neighborhood, at their houses.

The board requires cases of yellow fever, small-pox, scarlatina, diphtheria, and cholera, to be reported at its office where they are recorded. Non-contagious diseases are not recorded.

The board submits to the legislature an annual report, which is a document of considerable importance.

The board labors under a serious disadvantage in a great lack of public sentiment in favor of compulsory sanitary measures, a general want of appreciation of the importance of strict sanitation, and a consequent indisposition of the members of the city council to furnish the funds requisite for efficient work.

A good idea of the character of the statistical work of the board is given by the accompanying charts, from its report of 1879, showing the total mortality, mortality of children, the chief fatal diseases, and the like.

EPIDEMICS.

New Orleans has suffered frequently from epidemics of various diseases. The most severe of all of these was the cholera epidemic of 1832, referred to by Mr. Cable in his historical sketch, when one-sixth of the entire population was carried off.

Dengue.—In common with other southern cities, New Orleans has had frequent severe epidemics of dengue,

called by the negroes "dandy-fever", and commonly known as "break-bone fever". This disease seems to have found its way to America from the western coast of Africa, via Havana, though its history is by no means accurately traced. Neither are the means of its causation and communication well defined, nor yet the circumstances and conditions which lead to its assuming an epidemic form. It seems to confine itself chiefly to cities and towns, spreading little, if at all, into the country. This would lead to the possible inference that the foul accumulations of the denser communities constitute a favoring circumstance. The disease has some features in common with yellow fever, but, while extremely painful and debilitating, it is very rarely fatal. One attack affords no protection against a second one, and its spread is more general than that of any other disease when once it assumes an epidemic form.

Dengue is discussed with considerable minuteness in papers published in the sixth volume of the Reports of the American Public Health Association, written by Dr. J. G. Thomas, of Savannah, Dr. Henry B. Hurlbeck, of Charleston, and Dr. D. C. Holliday, of New Orleans, to which papers those interested in the subject are referred.

Yellow Fever.—New Orleans has suffered more extensively than any other city in the Union from serious epidemics of yellow fever. Excepting the epidemic of 1853, by which over 7,800 persons died, that of 1878 was the most serious of all, not only in its extent and fatality, but also in its influence on the industries and on the public sentiment of the communities of the lower Mississippi valley. It is estimated by those competent to judge that the well-marked cases of this year reached the enormous total of 25,000, and that no less than 4,500 died from the disease. The official reports place the total number of deaths at 4,046; but it is believed that many of the deaths ascribed to malarial fevers were really from yellow fever, these so-called malarial fevers appearing in the records of this year as the cause of a very unusual number of deaths.

The first case of the year was that of Clark, the purser of the steamship Emily B. Souder, who came ashore sick on the morning of May 23d, and died on the night of the 24th. His death was followed by that of Elliott, the engineer of the steamer, who died on the night of the 29th. There is some dispute whether the infection thus brought into the city was continued, but the continuance seems to be well established. The first death resulting from this infection took place early in July, in which month 26 deaths were recorded; in August there were 1,025; in September 1,780; in October 1,065; in November 147, and in December 3. Of the total deaths recorded, 3,863 were of whites and 183 of colored persons, the colored population being about one-fourth of the whole.

The contagion spread and became epidemic as far up as Hickman, on the Mississippi river, and at various other cities and towns, some quite remote from the river and apparently fully protected by their isolation. "Shot-gun quarantine" was established throughout the whole lower Mississippi valley, and commerce and all intercourse were practically suspended. So great were the suffering and loss and excitement resulting from these epidemics, that a new and vigorous impulse was given to the sanitary movement throughout the whole country. The establishment of the national board of health, of the sanitary council of the Mississippi valley, and the auxiliary sanitary association of New Orleans, all owe their origin and their great efficiency to the terrors of this terrible year.

There was another invasion (or a revival) of yellow fever in New Orleans in 1879, but so active were the measures taken for its suppression, and so efficient were the services of the auxiliary sanitary association, that it reached a total of only 19 deaths. In Memphis, where the means of immediate protection were much less, there were about 500 deaths.

The late Dr. Samuel Choppin, president of the state board of health of Louisiana, in his report dated January 10, 1880, says:

Great as are its natural advantages as a mart of trade—and they are unsurpassed by any city of the earth—its growth in population, business, and wealth, has hitherto been inconceivably retarded by these visitations of yellow fever. Were these natural advantages less than they are, its utter destruction would have been inevitable. But for this one great drawback to its progress, I think I am warranted in the belief that New Orleans, at this hour, might aspire to be considered the first commercial city of the Union. This is not the language of exaggeration. It is the natural deduction of facts. During the last 84 years (from the first introduction of yellow fever into New Orleans in 1796) not less than one hundred thousand of the flower and strength of the land have fallen victims of yellow fever within the limits of the city. And if we add to this the numbers that have died of the disease in neighboring towns and the country, the total mortality from this dread scourge brought here would range between *fifty* and *seventy-five thousand more*. The people who have died here of yellow fever would have built up a state.

THE AUXILIARY SANITARY ASSOCIATION.

As a direct outgrowth of the epidemic of 1878, and as a result of the interest in the subject displayed during the succeeding winter, there was organized on the 31st of March, 1879, an association of citizens known as "The Auxiliary Sanitary Association of New Orleans", which has been of the utmost value to the sanitary interests of the city. Mr. Edward Fenner, vice-president of the association, in his annual address in 1880, says:

The ready disposition of neighboring communities to blockade this city by barbarous shot-gun quarantines, which effectually paralyzed business and rendered inter-state communication almost impossible, showed but too plainly that, while the geographical position of New Orleans is most favorable to its increase in population, manufactures, commerce, and wealth, if its good health and good name can be established, it is the reverse of favorable, should public neglect subject it to the ravages of yellow fever.

The gentlemen chiefly instrumental in giving form and motion to this association were actuated by the most patriotic motives—the *rehabilitation of this city*.

They realized the fact that the time had come when the people could be appealed to with success to give countenance and material aid in support of any well-devised plans of sanitary improvement, to be undertaken by a committee of citizens and paid for by voluntary subscriptions.

The experience of the past had taught them that political corporations cannot be depended upon for that prompt and sustained action which enables men trained in the severe school of business affairs to execute large undertakings with economy and dispatch.

The task assumed by this association was surrounded with innumerable and apparently almost insurmountable difficulties. The movement was novel and the projectors untried; money was needed and the contributors must necessarily be numerous. The success attending your efforts to create a sustaining public opinion in favor of the radical reform proposed in your address to the people, issued the 6th of April, 1879, is evinced by the large number of your subscribers and the amount placed at your disposal.

The views of this association may be fitly illustrated by a quotation from the reply made by Lord Palmerston to the presbytery of Edinburgh, when they wrote to him to ask whether a national fast ought not to be appointed in consequence of the appearance of cholera.

His lordship gravely admonished the presbytery that the Maker of the universe had appointed certain laws of nature for the planet on which we live, and that the weal or woe of mankind depends on the observance of those laws—one of them connecting health with the absence of those noxious exhalations which proceed from overcrowded human beings, or from decomposing substances, whether animal or vegetable. He, therefore, recommended that the purification of towns and cities should be more strenuously carried on, and remarked that the causes and sources of contagion, if allowed to remain, will infallibly breed pestilence and be fruitful in death, in spite of all the prayers and fastings of a united but inactive people.

The enormous loss of life and values inflicted upon the country by the epidemic of 1878, not to speak of the boundless charity bestowed to alleviate local distress, has created an unwonted interest throughout the United States in measures of prevention.

The discussion of the American Public Health Association, composed of representative men from every state in the Union, on city sanitation and practical questions connected with the management of an actual or threatened outbreak of yellow fever, should be accepted by the people of New Orleans as conclusive evidence that our neighbors, near and far, will not permit us to remain indifferent to their wise suggestions.

Self-protection, and a very natural desire to avoid a repetition of the loss to the country caused by the epidemic of 1878, which has been estimated by good authority at not less than \$175,000,000, gives them the right to demand a corresponding interest and an unflinching determination on the part of our citizens to foster and promote the work plotted out by this association.

Dr. Choppin, in the report above referred to, says:

Undoubtedly the most impressive lesson of the great epidemic of 1878, to the people of this city, was the importance of improving its sanitary condition. It was apparent that the \$10,000 appropriated by the city authorities for the board of health would fall far short of the requirements of the case, and, as the legislature had afforded no aid, the only recourse was to raise means by voluntary contributions. The outcome of the necessities of the case was the organization of the auxiliary sanitary association and the contribution of about \$30,000 by the citizens. Although most of its funds were expended in works under the immediate control of the association, material aid was afforded to the board of health in the house-to-house inspection by ten efficient sanitary policemen placed at its disposal by the association for about four months.

On the whole, then, it may safely be affirmed that the sanitary condition of New Orleans in 1879, though far short of what is both desirable and possible, has been more satisfactory than at any other time in its history, unless we except a portion of the time when it was under martial law during the late war; and the propriety of this exception is doubtful.

The association has directed its attention to a reformation of the present privy system of the city; to the filling and draining of lots occupied by dwellings or in the vicinity of habitations, with a proper adjustment of the grade; to an improvement and extension of the water supply; to the reformation of the drainage canals by which the surface water of the city is removed in a very inefficient manner; to the establishment of public bath-houses and wash-houses; to the organization of an efficient system of garbage boats whereby the garbage of the entire city is removed daily to a point in the middle of the river below the city line and there thrown to the fishes which swarm in enormous numbers to feed upon it; and to the establishment of quite extensive and efficient means for flushing the gutters of the streets perpendicular to the river with water pumped directly from the Mississippi.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets of New Orleans are cleaned by the city, and the sidewalks by the property-holders at their own expense. In the work of street-cleaning the city administration receives material aid and co-operation from the auxiliary sanitary association.

Street-cleaning work is done by the city's own force, not by contract. There are two sweeping-machines employed, but most of the work is done by hand, the machines being used only at night and on the square-block pavements in the business part of the city. These pavements are gone over every second or third night when the weather permits. Cobblestone and other pavements are swept at longer intervals, according to the force of laborers which the funds at the disposal of the department allow to be employed, preference in frequency being given to the more thickly settled streets.

On the square-block pavements the cleansing is done with a fair degree of efficiency. On other pavements, those which are hand-swept, the efficiency is considerably less, and on the unpaved streets it is very imperfectly done, the difficulties being much greater and the limited working force being inadequate.

The cost of this work in 1879 was \$105,821 32. The expenditures of the auxiliary sanitary association for this work, during 1879, exceeded \$7,500.

The sweepings are deposited in the back portions of the city for the purpose of raising the grade on low streets.

The system as organized, if carried on by a sufficiently large working force, might be made very satisfactory, except in the matter of disposal; but the lack of a sufficient force, of both men and machines, has caused it to be much less than satisfactory. The use of the sweepings and scrapings of the streets for filling low places is quoted as being "decidedly advantageous". This opinion must of course be taken to relate to the benefit of raising the grades of streets rather than to the effect of depositing street filth in such proximity to habitations.

The street-cleaning ordinance is as follows:

ARTICLE 1116. It shall be the duty of the street cleaners to clean the gutters (with hoes or scrapers) of all filth, and put the same in piles, and have it carried away the same day to such places as the street commissioners may designate; and after the gutters shall have been scraped with hoes or scrapers, the water may be let in the gutters from the fire-plugs, and while it is running the street cleaners shall use brooms and sweep the gutters; always using hose to convey water from the fire-plugs to the gutters: for any violation of this ordinance the offender shall be liable to a fine of ten dollars for every offense, recoverable before any magistrate, one-half of the fine to go to the informer.

Garbage and ashes.—Garbage is removed by the city's force only. All such refuse matters are required to be set upon the sidewalk in some suitable receptacle between the hours of 3 a. m. and 8 a. m., and the receptacles are required to be removed by 10 a. m., before which time they are emptied by the drivers of the offal carts.

Ashes and garbage may be deposited in the same vessel. All is carried daily to the garbage boats, towed below the lower limits of the city and dumped in the middle of the river.

The annual cost to the city of the removal of ashes and garbage is about \$30,000, householders being subjected to no further cost or trouble than that of depositing these matters as above stated.

The whole question of municipal cleansing is at present receiving active attention, and popular sentiment in favor of sanitary reformations, especially such as relate to an improved condition of the streets, sidewalks, and gutters, "is daily growing and daily showing new results."

Mr. Cable expresses the opinion that generally there is no such improper keeping of garbage on premises, infrequent removal, improper handling, or improper final disposal of garbage, as to occasion nuisance or injury to health, except in certain remote portions of the city, such as the region of the dairies on Metairie ridge, and a similar region in the lower part of the city. In these sections the ordinances bearing on such matters are grossly violated, serious nuisance and probable injury to health resulting. This defective condition is the more important from the fact that a great proportion of the city's milk-supply comes from these two sections.

The system of garbage removal and disposal has the special merit of great simplicity, demanding neither elaborate apparatus nor skilled labor. Its defects lie in the difficulty of its execution on the unpaved streets in continued bad weather, when the roadways often remain for a long time practically impassable to loaded vehicles. This defect is the more serious since a great majority of the city's streets are unpaved. Also, the garbage boxes, during the hours of the morning when they are necessarily left standing on the sidewalks, are in themselves a nuisance. The defect in this regard, however, is not greater than in other cities where, according to the usual custom, refuse matters are set out by the householders, except in so far as the climate of New Orleans increases the resulting offensiveness. The gutters of the streets parallel to the river are generally in a most unclean condition.

Dead animals.—The ordinance concerning the removing of dead animals is as follows:

SECTION 30, Ordinance 6022.—Whenever any horse, mule, cow, or other animal shall die within the limits under the control of the board of health, the owner or keeper thereof shall have it forthwith removed to properly located and authorized factories, to be disposed of for useful purposes under proper regulations; or bury such animals beyond the inhabited portion of the city limits, or cast the same into one of the boats moored to the nuisance wharves.

Carcasses of the larger animals are taken by manufacturers of fertilizers and are removed to their factories at their own cost; those of smaller animals and fowls are deposited along with the ashes and garbage. This service entails no additional cost upon the city except in so far as it increases the amount of garbage to be removed. No record is kept of the number of dead animals of different kinds annually removed.

The chief defect of the system relates to the removal of the smaller carcasses, especially of animals without owners; this is often neglected and is a subject of frequent annoyance and complaint. The demand for the larger animals leads to their immediate removal, and the factories where they are disposed of are so situated as to create no noticeable public annoyance.

Liquid household wastes.—Chamber slops (the waste water from sleeping chambers) are, theoretically, generally thrown into the privy vaults; but to obviate the necessity for the costly emptying of vaults, such liquids are often surreptitiously discharged along with the laundry and kitchen wastes, which, according to universal custom, are carried by superficial or shallow drains to the street gutter.

Cesspools are prohibited by law, and violations of the law in this respect are probably infrequent, the open-gutter system affording at least the cheapest and least troublesome means for getting rid of such wastes.

In the more thickly settled parts of the city, including the district occupied by the residences of at least two-thirds of the total population, the gutters of the streets running back from the river are flushed daily, as are

also such of the parallel streets as have stone pavements. It is noticeable, however, that the cleansing of the gutters on those streets parallel with the river is very much less perfect, and that the accumulations of the solid matters carried to them by house drains are frequent and often offensive.

The contamination of drinking water.—Owing to the necessarily foul condition of the soil of the occupied portions of the city, no use—certainly no considerable use—is made of well-water. This is employed to some extent for watering animals; but it is generally conceded to be unfit for any manner of domestic use. The entire supply is by the public water-works, which furnish river water on premises and at street hydrants, and, very largely, by rain water caught and held in wooden tanks or cisterns above ground. Frequently these cisterns are placed one above the other, so as to furnish water to each floor of the house. They are of course entirely protected against contamination by the foulness of the soil, though they are obviously subject to considerable accumulations of dust containing much organic matter of foul origin, which, lodging on roofs and in gutters, is washed into the cisterns in considerable quantity, often accumulating to such a degree, and undergoing such decomposition, as to render the water decidedly unpleasant in taste, and not free from suspicion on sanitary grounds. The more careful householders adopt devices for discharging upon the ground the earlier portion of the rainfall, an automatic device being provided for diverting the flow from the cistern until after the roofs and gutters shall have become thoroughly cleansed.

The comparative immunity of New Orleans from typhoid fever is believed by many observers to result from the entire disconnection of the stored water from sources of contamination to which it would be subject if kept in underground cisterns.

In reply to the questions as to the merits and defects of the system in use, Mr. Cable says:

By the system of removal of more household waste above ground the danger of the accumulation of sewer gases is avoided, and emanations from such waste are rapidly carried into the air. One defect of the system is the emptying of chamber slops into privy vaults, which, in many of them, are liable to overflow, even from other abuses [misuses]. Another defect is the fouling and stagnation of the street gutters, especially in unpaved streets, where it is difficult to flush them properly, and the consequent generation of noxious gases and offensive odors.

The ordinance now in force concerning garbage, refuse, and corrupt or putrid water, is as follows:

SECTION 1. *Be it ordained by the council of the city of New Orleans*, That from and after December 12, 1878, it shall be unlawful for any person or persons to keep or deposit any offal, ashes, cinders, filth, foul or offensive matter, corrupt or putrid water, or any shells, hay, straw, kitchen stuff, paper, vegetable matter, or any substances of any kind, that may be offensive to smell, or injurious to health, or liable to become so, in any yard, lot, space, or building, or to throw the same on any sidewalk, or in any gutter, street, drain, or canal, or to cause the same to be done, or to permit or suffer any servant, employé, or member of the family to do so. That upon being notified by the administrator of improvements, or by any of his assistants or foremen, or by any member of the Crescent City police, it shall be the duty of the occupants or owners of the dwellings, stores, offices, buildings, or lots before which or in which the said stuff may be found, to immediately remove the same.

SEC. 2. *Be it further ordained, etc.*, That it shall be the duty of the ward superintendents or foremen employed under the direction of the administrator of improvements, and of all members of the Crescent City police, to make against any person or persons violating the foregoing section an affidavit before the recorder of the district within whose jurisdiction the offense is committed, and upon conviction the offender shall be fined not more than \$25 nor less than \$10, and, in default of payment of fine, be imprisoned for a period of time not exceeding 30 days nor less than 5 days.

SEC. 3. *Be it further ordained, etc.*, That it shall be the duty of the occupants of all dwellings, offices, stores, or buildings of every character to put, or cause to be put, the ordinary refuse, sweepings, ashes, cinders, and kitchen offal, and all other substances mentioned in section 1, coming from said buildings or premises, into tubs, boxes, barrels, or other suitable receptacles, to have the same placed on the outside of the banquettes, immediately in front of their dwellings, offices, or stores, convenient to be taken off by the offal carts, and hereafter such deposits shall not be made earlier than 3 a. m. nor later than 8 a. m., and the receptacles, as above, shall not be left by said persons on the banquettes later than 10 a. m. All persons violating this section shall be liable to a fine not exceeding \$25 nor less than \$5, and in default of payment of said fine, to imprisonment for a period of time not exceeding 30 days nor less than 5 days, said fine or imprisonment to be imposed by the recorder of the district within whose jurisdiction the offense is committed.

SEC. 4. *Be it further ordained, etc.*, That it shall be the duty of all the members of the Crescent City police to enforce all the sections of this ordinance, to make affidavits before the recorder having jurisdiction against any and all persons violating any of the sections of this ordinance, and to arrest immediately any and all persons caught violating the same.

SEC. 5. *Be it further ordained, etc.*, That all ordinances or parts of ordinances conflicting herewith be and the same are hereby repealed.

Human excreta.—There being no public sewers, and all delivery of excretal matters into the street gutters being prohibited, the city is supplied, almost without exception, with privy vaults.

By ordinance, all privy vaults must be water-tight; as a matter of fact, owing largely to the saturated condition of the soil, few if any of them are so. Almost the only exception to the vault system relates to the use of about 800 earth closets in the whole city.

The disposal of the night soil is by the emptying of vaults by "vidangeurs". It is carried to the river in close carts and is transferred to nuisance boats by which it is dumped into the middle of the river below the city limits. It is not permitted to use human excreta for the manuring of land.

Manufacturing waste.—The water of the gas-works is delivered into the draining canals, and constitutes a serious source of nuisance. The water of sugar-refineries, which is comparatively inoffensive, is delivered into street gutters. Water from ice-works and elevators is used with advantage for flushing the street gutters. Slaughter-house waste is made into fertilizers on the spot—near the lower limits of the city. The waste of cotton-seed oil factories is burned under the boilers. Rice chaff, tin cuttings, and other solid wastes are dumped by the garbage boats along with the domestic refuse.

Concerning the merits and defects of this system, Mr. Cable says:

The discharge of sugar-refining water into the gutters, and so into the canals, must produce more or less alcoholic and acetic fermentation. The city authorities assert that the gas water is the principal cause of the corrupt condition of the waters in the canals, which are extremely offensive, dark, and foul.

NOTE.—It is proper to repeat that the system of municipal cleansing is now enjoying the benefit of a revolution in public sentiment in New Orleans.

PUBLIC SCHOOLS.

The last report of the superintendent of public schools, that has been received, is that of 1879. This shows that the total number of pupils on the register is 24,150. Of these 17,294 are white and 6,856 are colored.

The following is the budget of expenditures submitted by the finance committee of the board and adopted:

Salaries of teachers.....	\$231,288 00
Wages of porters.....	17,544 00
Rents.....	17,256 00
Superintendent's office, clerk and messengers.....	1,200 00
Treasurer.....	1,200 00
Secretary.....	3,000 00
Supplies, brooms, etc., for porters.....	2,200 00
Stationery for schools.....	2,500 00
Fuel.....	3,150 00
Sanitary company contract.....	850 00
School furniture.....	12,000 00
Repair to school-houses.....	11,500 00
Total expenditures.....	<u>303,688 00</u>

The actual receipts for the year 1878 have been \$179,721 06, derived as follows:

Receipts from city tax.....	\$159,045 66
From state tax.....	20,675 40

The actual disbursements were \$171,459.

The report of the superintendent indicates an insufficient appropriation of funds for the securing of the best results, and especially a low scale of salaries for teachers; these ranging between \$324 and \$1,620 per annum. Only 25 of the teachers are males, and 407 are females, averaging one teacher to about 55 registered pupils.

Concerning the school accommodations the following statements are made:

Notwithstanding the erection of 9 McDonough school-houses, 2 of which have been completed during the current year, and the fact that two additional school-houses are rapidly approaching completion under the direction of the commissioners of this fund, our school accommodations are entirely inadequate to meet the wants of the city. We require additional accommodations for 2,000 children residing in the older and more thickly settled portions of the city.

The condition of the school buildings has been greatly improved during the current year. The want of means prevented as extensive repairs as were necessary and desirable, but the limited resources were judiciously expended, and many of the buildings present a marked contrast to their previous appearance. The action of the city government in requiring the school board to make all necessary repairs upon the school-houses imposes a burden greater than the means at the disposal of the board can sustain. The buildings are too numerous; many of them too far gone in decay to be placed in good condition without larger expenditures than are warranted by the appropriation for the support of the schools.

STATISTICS OF EDUCATIONAL AND RELIGIOUS INSTITUTIONS.

The enumeration of 1880 furnishes the following statistics of the religious and educational institutions of New Orleans:

Public schools.....	39	Methodist Episcopal.....	22
Actual attendance on schools.....	15,316	Methodist, South.....	11
Private elementary schools.....	106	Presbyterian.....	13
Private high schools.....	42	Protestant Episcopal.....	11
Colleges.....	3	Swedish Lutheran.....	5
Business colleges.....	5	Roman Catholic.....	32
Professional schools.....	4	Greek.....	1
Baptist churches.....	35	Unitarian.....	1
Congregational churches.....	7	Christian.....	1
Jewish churches.....	6		

There are in the city 16 libraries, having together 111,644 volumes.

CHARITABLE INSTITUTIONS.

[Contributed by Rev. Fred. H. Wines, special agent.]

No account of the city of New Orleans would be complete without mention of its many institutions of beneficence, for the care of the infirm and the destitute, of which there are nearly 40. Nearly half of them are

under the direction of some one or another of the religious orders connected with the Roman Catholic church. The city authorities maintain a home for the aged and infirm, a house of refuge for boys, and an insane asylum. In addition to the Charity hospital (which is widely known on account of its connection with the Louisiana State Lottery, and is a splendid establishment), there are three other smaller hospitals, beside the Louisiana retreat for the insane (a private asylum). One of these bears the honored name of the Touro Infirmary. The Hebrews also maintain a home for Jewish widows and orphans. The number of asylums for orphaned and friendless children is about twenty.

The following list of institutions in the city is believed to be accurate and complete. It exhibits not only the title and location of each, together with the name and title of the officer in charge, but also the reported capacity and the number of inmates returned as actually present June 1, 1880, the day of taking the census. The Roman Catholic institutions are distinguished by a † prefixed:

Name.	Capacity.	Number of inmates June 1, 1880.	Name of chief executive officer in charge.	Official title.	Location.
† Asile de la Ste. Famille (for colored children).....		5	Sister Charles Josephine.....	Superior.....	
Asylum for Destitute Orphan Boys.....	150	50	George Burns.....	Superintendent.....	Saint Charles.
Asylum of the Société Française de Bienfaisance..	100	0	J. Schneetzer.....	President.....	Saint Ann, near Roman.
† Charity Hospital.....	1,000	514	Sister Agnes.....	Superior.....	Common.
Children's Home (P. E.).....	50	40	Sister Roberta.....	Superior.....	Jackson, corner Saint Thomas.
City Insane Asylum.....	160	161	John C. Pooley.....	Superintendent.....	Common, corner White.
Find Asylum (for Prot. widows and their children)...	40	39	Mrs. S. M. Packard.....	Matron.....	Camp, corner Amelia.
German Protestant Orphan Asylum.....	180	102	Gustave Pixberg.....	Superintendent.....	State, corner Camp.
† Home for the Aged Poor (Little Sisters).....	215	221	Mother Joseph Theresa.....	Superior.....	North Johnson, corner Laharpe.
Home for Aged and Destitute Women.....		21	Miss J. P. Moore.....		Magnolia, corner Lafayette.
Home for the Aged and Infirm (city charity).....	60	57	Mrs. E. B. Stokes.....	Matron.....	Annunciation, corner Calliope.
† Hôpital de la Ste. Famille (for old colored people)...		22	Sister Theresa.....	Directress.....	40 Saint Bernard avenue.
† Hôtel Dieu (infirmary).....	50	15	Sister Mary Carroll.....	Superior.....	Common.
† House of the Good Shepherd.....	300	209	Sister Mary Rose.....	Superior.....	Bienville, corner Magazine.
House of Refuge (boys).....	600	242	Thomas Brennan.....	Superintendent.....	Metairie road.
† House of Refuge (destitute colored girls).....	350	42	Sister Mary Rose.....	Superior.....	Annunciation.
Jewish Widows' and Orphans' Home.....	170	101	N. J. Bunzel.....	Superintendent.....	Jackson, corner Chippewa.
† Louisiana Retreat for the Insane.....	160	95	Sister Mary Jane.....	Superior.....	Henry Clay avenue.
Luzenberg Hospital (for contagious diseases).....	50		S. S. Hayes, M. D.....	Proprietor and super't....	431 Elysian Fields.
† Mount Carmel Female Orphan Asylum.....	100	85	Sister Justine.....	Superior.....	53 Picty.
† New Orleans Female Orphan Asylum.....	130	135	Sister Eustolia.....	Superior.....	Olio, corner Camp.
Newsboys' Lodging House.....			Charles R. Roos.....	Superintendent.....	167 Franklin.
Orleans Infirmary.....	40		Dr. Beard.....	Superintendent.....	142 Canal.
† Orphan Girls' Asylum, Immaculate Conception...	125	95	Sister Mary.....	Superior.....	871 North Rampart.
Poydras Female Orphan Asylum.....	250	85	Mrs. Carrie M. Sutherland...	Matron.....	Magazine, corner Peters avenue.
Protestant Orphans' Home.....	150	140	Ann Walker.....	Matron.....	Seventh, corner Constance.
Providence Asylum for Female Colored Children.....		40			Hospital, corner North Tonti.
† Saint Alphonsus' Orphan Asylum.....	130	104	Mother M. Joseph Devereux..	Superior.....	Fourth, corner Saint Patrick.
Saint Anna's Asylum (P. E.).....	100	85	Mrs. E. E. Kip.....	Matron.....	Prytania, corner Saint Mary.
† St. Elizabeth's House of Industry (orphan girls)...	150	133	Sister Angelica.....	Superior.....	Napoleon, corner Prytania.
† Saint Isidore's Institute (industrial farm school)...	100		Rev. Father Fourmond.....	Provincial.....	North Peters, corner Reynes.
† Saint Joseph's German Orphan Asylum.....	200	182	Sister Mary Jacobina.....	Superior.....	Laurel, corner Josephine.
† Saint Mary's Catholic Orphan Boys' Asylum.....	350	343	Sister Mary of the Desert...	Superior.....	Chartres, corner Mazant.
† Saint Vincent's Half Orphan Asylum (for girls)...	80	15	Sister Ernestine.....	Superior.....	Cambronne, corner Third.
† Saint Vincent's Home for Destitute Boys.....	50	31	Father O'Brien.....	Director.....	371 Bienville.
† Saint Vincent's Infant Orphan Asylum.....	200	189	Sister Mary Agnes.....	Superior.....	Magazine, corner Race.
Touro Infirmary.....	40	15	F. Loeber, M. D.....	Surgeon.....	South Peters, corner Calliope.
United States Marine Hospital.....			Not in use.		
Widows' Home.....	40	41	C. Barjac.....		352 Esplanade.
Total.....	5,820	3,060			

The jail of Orleans parish, with 59 cells and a reported capacity of 350, contained, June 1, 1880, 189 persons.

POLICE.

System.—Strictly municipal. Under control of a board of commissioners composed of the mayor of the city and the administrator of police, both *ex officio* members, and four members appointed by the mayor, of whom the term of one expires each year.

Jurisdiction.—Only within the boundaries of the parish of Orleans; that is, from the upper line of the seventh district, late the town of Carrollton, to Poland street, the city's lower boundary; and from the rear limits of the fifth district, late Algiers, on the west bank of the Mississippi, to the southern shore of lake Pontchartrain.

Area of territory.—One hundred and fifty square miles, including that part of the Mississippi river forming the harbor of New Orleans.

Force (numbers).—Officers: 1 chief of police, 1 chief of aids, 6 aids patrolmen. On special detail as follows:

Sanitary officers under orders of the board of health.....	4
Patrolmen in the recorders' courts.....	6
In police stations.....	22
In the public squares.....	8
In the market-houses.....	7
On regular active duty in public streets:	
Day.....	64
Night.....	124
On regular active duty on harbor-front:	
Day.....	20
Night.....	10
On regular active duty, as mounted suburban police.....	3
Total force of patrolmen.....	<u>268</u>

Mode of appointment.—Appointed by the mayor and confirmed by the council.

Term of tenure.—During good behavior.

Mode of removal.—Only for cause, and only by the board of police commissioners.

Duties.—General only to enforce city ordinances and make all arrests for criminal offenses.

Uniform.—Winter: captains and sergeants, double-breasted frock coat of navy-blue cloth, with double row of brass buttons. Corporals and patrolmen, single-breasted coat of same, with one row of silver buttons. Summer: captains and sergeants, double-breasted sack of navy-blue flannel, with brass buttons; corporals and patrolmen, single-breasted blouse of same, with silver buttons.

Equipment.—Policeman's club and whistle.

Arms.—None. The law against carrying concealed weapons applies in full force to policemen. But this law is not enforced as against the police.

Pay.—Chief of police, \$290 per month; chief of aids, \$150; aids, \$100; patrolmen, \$50. Uniform and whistle at expense of individual; club furnished by the city.

Houses of detention.—Lock-ups, 11; workhouse, 1; boys' house of refuge, 1; county jail (called parish prison), 1.

How kept.—Lock-ups by regular police; workhouse and boys' house of refuge by administrator of police; and parish prison by the criminal sheriff of the parish of Orleans.

Police courts.—Four in number; sit daily; presided over by magistrates known as "recorders", who hold office by popular election.

Efficiency.—The police of New Orleans is well officered; but the entire force is ill-paid, and at times not paid; it is therefore deficient in *morale*, and is totally inadequate in point of numbers.

There is also a body of police under the management of a private company, and known as the

HARBOR PROTECTION POLICE.

Duties.—It is a thoroughly organized and equipped body, whose duty it is, under contracts made with owners or custodians, to police ships, wharves, and the like, and to receive and watch cargoes, for which the company becomes, for the time being, responsible. And also to co-operate with the regular city police, and to assist them at all times when they can do so without jeopardizing the property over which they are specially in charge.

Working force.—Its numbers vary according to the amount of commercial movement in the port; from about 120 in winter to some 70 in summer.

Appointment.—The appointment of the force is made by the company, based on the recommendation, in each case, of three good citizens, who become bondsmen for the appointee. The patrolmen are commissioned by the mayor of the city, under the provisions of the following city ordinance:

No. 6715 Administration series.

AN ORDINANCE relative to M. J. Farrell's Harbor Protection Police.

Be it ordained by the mayor and administrators of the city of New Orleans, in common council convened, That the mayor of the city of New Orleans be and is hereby authorized, at his discretion, to commission as a patrolman, with police powers, each person employed as a member of "M. J. Farrell's harbor protection police".

Be it further ordained, etc., That the persons commissioned by the mayor in conformity with the provisions hereof, shall not be required to furnish the bond to be executed by patrolmen under ordinance No. 3914, A. S.; nor shall such person receive or be entitled to any salary or compensation of any kind from the city of New Orleans. Adopted by the council of the city of New Orleans, November 9, 1880.

Uniform.—Their uniform, which they are required to wear at all times, is a suit of blue flannel and a stiff hat of black felt, to which is added, when on duty, a patent-leather band bearing the initials of the organization in bright metal on the front.

Equipment.—They are equipped with an English police-whistle and club.

Pay.—Each policeman is paid \$55 per month. The officers are 1 superintendent, 1 captain, 1 sergeant, and 2 corporals. The company charges for the services of each man for each twelve hours, \$2 50. Vessels often employ as many as three men from this force, assigning one to the ship's deck, one to the freight on the wharf, and a third to the water approaches around and beneath the wharf. The company, formed on account of the great frequency of incendiary fires on shipboard, reports its total gross losses, in the 11 months in which it has existed, at \$18, after having watched nearly 500 vessels and cargoes. This organization comprises also a branch agency known as the

CITY PROTECTION PATROL.

This body consists of some 18 men, and undertakes the night-watching of stores, factories, warehouses, and offices in the streets of the city. Each patrolman moves on a beat, reporting every few minutes throughout the night to a central office by means of a series of ordinary American district telegraph signal-boxes encased in iron, under lock and key. Subscribers pay from \$5 to \$15 per month, according to the magnitude or importance of their establishments, and are furnished with a regular and minute morning report, in writing, from the central office.

There has also been in operation another body of men holding special police powers, under the management and in the employment of the New Orleans Cotton Exchange. Their duty is thoroughly to police the handling of the immense cotton receipts and shipments of the port, from the moment of arrival until its final stowing in the vessel's hold for export. This body of ununiformed police holds commissions from the mayor of the city, but is appointed by the New Orleans Cotton Exchange and retained entirely under its control. It is divided into 25 supervisors acting in the cotton-presses and yards, and 7 inspectors in railroad yards, on steamboat-landings, and on ship-wharves. Their pay is \$100 per month. The operation of this force is known to have put a stop to a general pilfering of cotton, which amounted in value to as much as half a million dollars a year.

COMMERCIAL STATISTICS.

During the fiscal year ending June 30, 1880, the value of the exports of merchandise from the port of New Orleans amounted to an aggregate of \$90,238,503. In this amount, the following items are included:

Cotton (1,428,996 bales).....	\$75,553,195
Wheat	4,697,726
Corn	4,120,511
Cotton-seed.....	2,457,103
Oil-cake	1,687,158

During the same fiscal year the imports of merchandise into this port amounted to \$10,611,353, including—

Coffee	\$4,010,166
Iron.....	1,357,808
Sugar	647,377
Molasses.....	142,813

Beside this, merchandise was imported and passed through to other cities to the amount of \$425,809.

The number of emigrants arriving from foreign ports was about 3,000.

The number of vessels entered was 852, with a tonnage of 760,910 tons.

The number of vessels cleared was 915, with a tonnage of 858,765 tons.

The number of vessels owned in New Orleans is: Ocean steamers, 21; tonnage, 27,920. River steamers, 163; tonnage, 29,042. Sailing vessels, 353; tonnage, 16,134.

COMMERCE AND NAVIGATION.

[From the reports of the Bureau of Statistics for the fiscal years ending June 30.]

Customs district of New Orleans, Louisiana.	1879.	1880.
Total value of imports.....	\$7,220,597	\$10,842,254
Total value of exports:		
Domestic	\$63,794,426	\$90,249,874
Foreign	\$187,187	\$203,516
Total number of immigrants	1,834	2,663

Customs district of New Orleans, Louisiana.	1879.		1880.	
	Number.	Tons.	Number.	Tons.
Vessels in foreign trade:				
Entered.....	734	652,789	852	760,910
Cleared	724	666,037	915	858,765
Vessels in coast trade and fisheries:				
Entered.....	298	274,233	442	438,828
Cleared	373	279,930	382	360,394
Vessels registered, enrolled, and licensed in district..	387	54,302	396	57,848
Vessels built during the year	10	302	16	202

SOCIAL STATISTICS OF CITIES.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of New Orleans for 1880, being taken from tables prepared for the Tenth Census by E. A. Deslonde, chief special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 10 years.	Females above 15 years.	Children and youths.			
All industries	915	\$8,503,303	7,606	1,286	552	\$3,717,557	\$10,771,802	\$18,808,006
Blacksmithing (see also Wheelwrighting)	64	31,020	147	1	8	71,965	53,075	185,673
Bookbinding and blank-book making	6	11,000	16	.....	3	10,211	5,520	24,369
Boot and shoe findings	9	57,200	40	2	6	20,270	98,932	171,080
Boots and shoes, including custom work and repairing	64	43,200	269	.....	6	116,800	174,745	367,531
Boxes, fancy and paper	4	14,600	41	12	46	20,483	50,400	125,928
Boxes, wooden packing	4	15,200	15	12	6	7,572	10,220	25,200
Bread and other bakery products	99	109,020	317	8	17	120,706	540,450	981,160
Brooms and brushes	6	11,750	63	.....	3	22,614	80,381	134,610
Carpentering	22	58,600	262	.....	4	138,595	220,400	430,850
Carriages and wagons (see also Wheelwrighting)	8	38,700	92	.....	6	51,196	40,560	135,000
Clothing, men's	33	190,300	276	628	30	175,971	743,407	1,078,550
Clothing, women's	6	83,000	2	273	.....	49,875	113,353	180,278
Coffee and spices, roasted and ground	3	1,300	3	.....	1	1,524	9,510	11,876
Coffins, burial cases, and undertakers' goods	7	2,000	9	.....	.....	2,911	4,122	13,800
Confectionery	21	132,800	86	11	17	33,754	274,571	303,040
Cooperage	53	53,650	256	.....	.....	100,830	105,704	276,618
Cordials and sirups	4	43,000	30	.....	.....	11,066	43,000	82,000
Cotton compressing	19	2,135,000	560	.....	.....	300,730	105,788	747,500
Dentistry, mechanical	3	9,200	6	.....	3	5,350	8,250	20,150
Drugs and chemicals	7	16,700	13	.....	.....	4,100	8,850	22,750
Dyeing and cleaning	12	6,925	13	3	1	5,060	3,800	22,850
Flouring- and grist-mill products	4	69,600	31	.....	.....	13,823	248,480	317,000
Food preparations	4	16,000	12	1	3	5,328	19,000	47,880
Foundry and machine-shop products (see also Iron work, architectural and ornamental)	20	738,375	748	.....	9	405,745	500,800	1,228,300
Furniture (see also Mattresses and spring beds; Upholstering)	33	32,976	62	1	6	30,281	35,420	104,563
Galvanizing	3	700	1	.....	.....	300	700	3,005
Hairwork	6	6,100	6	6	.....	3,592	6,000	17,900
Instruments, professional and scientific	3	1,600	3	.....	.....	1,260	1,700	5,400
Iron work, architectural and ornamental (see also Foundry and machine-shop products)	3	1,800	10	.....	.....	3,477	4,200	14,500
Liquors, malt	8	157,613	113	.....	.....	54,992	295,363	457,744
Lithographing (see also Printing and publishing)	3	2,000	8	.....	.....	4,500	3,250	13,500
Lock- and gun-smithing	12	2,600	11	.....	.....	2,700	1,980	11,670
Looking-glass and picture frames	5	7,050	6	.....	1	2,802	8,575	16,550
Lumber, planed (see also Sash, doors, and blinds; Wood, turned and carved)	7	78,500	98	.....	4	44,873	162,610	267,230
Lumber, sawed	6	152,200	53	.....	.....	17,505	180,085	234,340
Marble and stone work	11	62,550	65	.....	.....	32,575	61,208	134,400
Masonry, brick and stone	16	17,500	85	.....	15	30,500	30,700	90,500
Mattresses and spring beds (see also Furniture)	3	3,450	8	1	.....	2,712	25,500	30,200
Mineral and soda waters	7	29,100	37	.....	.....	18,812	24,860	75,000
Oil, cottonseed and cake	7	785,500	836	15	65	275,105	1,030,150	2,751,150
Painting and paperhanging	12	10,425	98	.....	.....	30,412	33,800	80,000
Photographing	12	39,100	37	6	2	27,300	10,800	79,705
Plumbing and gasfitting	9	16,300	31	.....	.....	17,441	40,500	71,600
Printing and publishing (see also Lithographing)	25	303,050	503	4	17	407,946	226,600	764,036
Rice cleaning and polishing	6	225,000	162	.....	.....	56,040	1,928,387	1,573,281
Saddlery and harness	23	169,500	144	1	15	74,674	204,750	370,505
Sash, doors, and blinds (see also Lumber, planed; Wood, turned and carved)	4	285,000	159	.....	.....	81,800	240,000	462,000
Shipbuilding	17	145,200	104	.....	.....	93,366	101,965	203,050
Soap and candles	12	113,450	45	.....	6	19,790	89,090	142,405
Sugar and molasses, refined	4	385,000	190	.....	.....	50,000	1,840,000	1,483,000

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Surgical appliances	3	\$1,550	5	.....	.....	\$2,070	\$1,075	\$6,000
Tinware, copperware, and sheet-iron ware.....	24	94,800	110	.....	3	51,271	105,890	199,559
Tobacco, chewing, smoking, and snuff (see also Tobacco, cigars and cigarettes).	8	348,000	127	6	88	70,540	242,100	424,035
Tobacco, cigars and cigarettes (see also Tobacco, chewing, smoking and snuff).	47	175,074	680	187	87	179,990	152,156	506,612
Upholstering (see also Furniture).....	12	8,325	15	.....	.....	3,335	9,575	29,640
Upholstering materials	3	30,000	21	41	2	19,530	100,000	153,000
Watch and clock repairing	13	11,600	23	.....	.....	14,795	8,346	32,379
Wheelwrighting (see also Blacksmithing; Carriages and wagons) ...	10	13,900	25	.....	1	7,708	7,825	25,112
Wood, turned and carved (see also Lumber, planed; Sash, doors, and blinds).	3	5,400	11	.....	.....	6,225	21,542	39,404
All other industries (a)	43	944,250	377	67	71	156,822	426,954	855,360

a Embracing bags, other than paper; baskets, rattan and willow ware; brick and tile; brass castings; cars, railroad, street, and repairs; cordage and twine; cork cutting; cotton goods; cutlery and edge tools; fertilizers; flags and banners; fruits and vegetables, canned and preserved; gold and silver, reduced and refined; hammocks; hardware; ice, artificial; japanning; leather, curried; leather, tanned; liquors, distilled; mirrors; patent medicines and compounds; perfumery and cosmetics; plated and britannia ware; pumps; stencils and brands; stone- and earthen-ware; trunks and valises; umbrellas and canes; and vinegar.

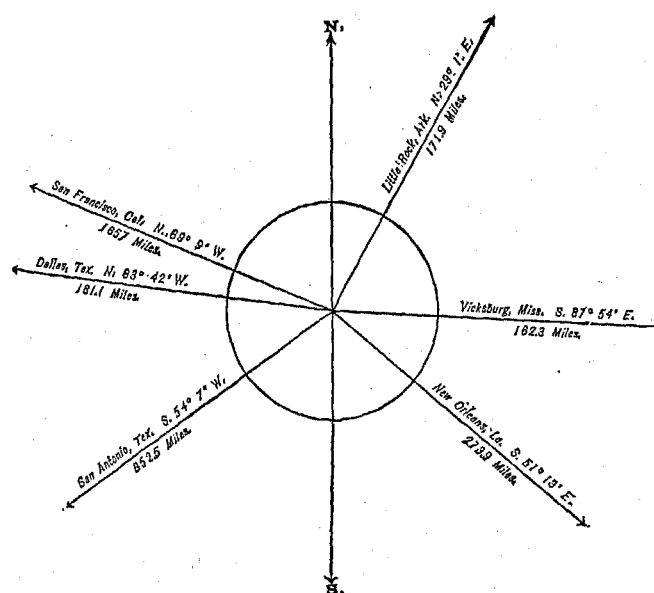
From the foregoing table it appears that the average capital of all establishments is \$9,360 99; that the average wages of all hands employed is \$391 16 per annum; that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$16,397 12.

SHREVEPORT, CADDO COUNTY, LOUISIANA.

POPULATION

IN THE
AGGREGATE,
1850-1880.

	Inhab
1790.....	.....
1800.....	.....
1810.....	.....
1820.....	.....
1830.....	.....
1840.....	.....
1850.....	1,728
1860.....	2,190
1870.....	4,607
1880.....	8,009



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	3,803
Female.....	4,207
Native.....	7,495
Foreign-born.....	514
White.....	3,219
Colored.....	4,790

Latitude: 32° 30' North; Longitude: 93° 45' (west from Greenwich); Altitude: 260 to 355 feet.

FINANCIAL CONDITION:

Total Valuation: \$1,956,100; per capita: \$244 00. Net Indebtedness: \$457,144; per capita: \$57 08. Tax per \$100: \$3 10.

HISTORICAL SKETCH.(a)

The original area and town site of Shreveport is a section of land (640 acres) reserved by the Caddo Indians, the original proprietors, and donated to Larkin Edwards, a friendly white man, who had lived among them for several years, and to whom they were very much attached and indebted for services rendered them in their intercourse with the frontier people of Louisiana, Texas, and Arkansas, also with governmental authorities. The treaty granting their lands to the government was entered into before the year 1835, although they were still roaming the forest; and one of its articles seems to have stipulated that Edwards was given the privilege of locating

^a Hon. A. Currie, mayor of Shreveport, not only secured and transmitted nearly all the detailed information regarding the present condition of the city, but furnished the historical sketch with which this report is introduced.

his claim at any point of the lands vacated. He selected what was then known as Cane and Bennett's bluff. A substantial log house decorated the site, which was then very probably a trading-post. A few additional log dwellings were erected in 1835. The selection made by Edwards crossed different sections, townships, and range lines. When the United States surveyor traversed the claim and marked out its boundaries in May, 1836, it was designated on the township maps as section 37, township 18, range 14 west, in the northwestern district of Louisiana, containing 634 acres and a portion of an acre. On January 24, 1835, Edwards sold his floating claim to Angus McNeil for the sum of \$5,000. In July, 1835, Jehial Brooks, acting for the government, formally ratified the claim, and his act was subsequently confirmed by a decree of the Supreme Court of the United States. The act of conveyance was soon afterward completed, acknowledged, and accepted.

By an act dated May 27, 1836, Captain Henry M. Shreve, of Kentucky, James B. Pickett, of South Carolina, Thomas T. Williamson, of Arkansas, Sturgis Sprague, of Mississippi, Bushrod Jenkins, and the commercial firm of Cane & Bennett, of Natchitoches, Louisiana, became associated with McNeil in the Edwards claim, "share and share alike", for the sum of \$4,166 66 $\frac{2}{3}$, the members binding themselves to select a lot and build a dwelling on the same. These gentlemen soon formed an organization called the "Shreve Town Company", naming the place after Captain Shreve. Angus McNeil, the original proprietor, was chosen president. That portion of the site extending from the river to the highlands, bounded in the southwest by Common street, was subdivided into blocks, streets, and alleys, regularly numbered, named, and mapped out. The principal thoroughfare was named Texas street, after the neighboring republic of Texas, and its extension, as the town grew into a city, was called Texas avenue.

In March, 1836, about the time the Shreve Town Company was organized, the state legislature chartered the Lake Providence and Red River Railroad Company. The line was drawn to run from the Mississippi river, near Lake Providence, in Carroll parish, via Monroe, on the Ouachita river, to an indefinite point on Red river, between the great raft and Rigolet Bon Dillu, in Natchitoches point. Caddo point was then a portion of Natchitoches, and continued so until January, 1838, when, by an act of the legislature, it was organized, and the house of Thomas L. Wallace made the seat of justice, in case no public place was provided. The above road would doubtless have terminated at Shreve Town if it had been built, as the site of the town was almost midway between the great raft and Rigolet Bon Dieu. Stock-books were opened at Lake Providence, Vicksburg, Monroe, Natchitoches, and Philadelphia, by special commissioners. The state was also authorized by the act to take stock and aid its construction.

On the 7th of February, 1837, by a public act of the Shreve Town Company, to which all the members or their agents subscribed, full power and authority was lodged in their president to convey and transfer to all persons desiring to purchase the same any of the subdivisions of their land. A number of sales were immediately made, and the town began to grow populous. On the 20th of March, 1839, the legislature of Louisiana granted a charter to the inhabitants, named the place "Shreveport", and made it the seat of justice for Caddo parish. The first election was held in May of the same year, five trustees being chosen, and they elected one of their number mayor, as required by the charter. A full corps of other officials, as designated in the charter, was selected by the trustees, clothed with authority, and installed in office. The power of taxation was given, but the gross amount to be collected was limited to \$1,000. The charter of 1839 was never entirely superseded until the charter of 1878 was granted, but was altered, amended, and greatly extended from time to time by act of the legislature. The powers of the trustees and the number of the members was increased; also the power of taxation, etc.; and in 1852 the revenues of the ferry were divided with the parish of Bossier. The ferry then was merely a cumbersome flat-boat, bearing no comparison to the magnificent steam-ferry now in use and making trips every 10 minutes.

The country adjacent was rapidly settled by thrifty and experienced planters from the older states, who brought a large number of slaves with them. The city itself, being at the head of low-water navigation on Red river, became the *entrepôt* of the inhabitants, not alone of northwest Louisiana, but also of southwest Arkansas and of eastern Texas. Through judicial proceedings instituted against McNeil, the original town company was dissolved, and the unsold lots and lands were appraised or valued, and partitioned out among the members on the 10th of May, 1843.

In 1853 a very malignant type of yellow fever spread from New Orleans up the Red River valley and seized upon Shreveport, which had the effect of checking the rapidity of its growth for a short time. In a few years, however, all traces of its effect disappeared.

In 1858 the Vicksburg, Shreveport, and Texas railroad began operations at Shreveport, and before the breaking out of the war, in 1861, had completed about 20 miles of its road and was operating the same westward into Texas. The same company had also constructed about 90 miles of road from the banks of the Mississippi river, opposite Vicksburg, to Monroe, on the east bank of the Ouachita river, and had bridged the last-named stream. The war stopped operations at both ends. The gap between Shreveport and Monroe, 90 miles east, is still unclosed, owing to complications in title, which have been finally settled by the United States Supreme Court. The old bondholders were given possession. They reorganized the company, changed its name to the Vicksburg, Shreveport, and Pacific, and are moving with a view of completing the road to this point at an early day, to connect with the Texas and Pacific road, which already has its terminus here.

During the late civil war quite a trade sprang up between Shreveport and Mexico, cotton being sent there in wagons and exchanged for medicines, coffee, and other needed supplies. The round trip lasted about 3 months, and trains, numbering as high as 50 wagons, went and came. On December 24, 1861, Shreveport was created the state capital, and in the spring of the following year the records, archives, offices, etc., were moved hither.

In the summer of 1867 the yellow fever again invaded the Red River valley from New Orleans, and broke out in Shreveport in a mild form. It was chiefly noted for the long period it continued to manifest its presence; some citizens returning to their homes long after heavy frost and cold weather had set in became infected.

Some time previous to this, the Southern Pacific Railroad Company leased for a term of 20 years that portion of the Vicksburg, Shreveport, and Texas road running from Shreveport to the Texas line, and completed the same to Marshall, Texas, 4 miles west of Shreveport, and in 1869 began building toward Longview, Texas, 65 miles west of Shreveport, toward which the International and Great Northern, coming north from Houston, was aiming. Its name was changed to the "Texas and Pacific", and in 1873 it was pushed to Dallas, Texas, 185 miles west from Shreveport, and in a short time extended from Marshall north to Texarkana, connecting there with the Iron Mountain railroad to Saint Louis. The years 1870, '71, '72, '73 marked the beginning and end of a lively era in Shreveport. A line of boats was inaugurated to run from Saint Louis direct to the city, boats also began running direct from Cincinnati, and the fleets from New Orleans began to increase. This, together with the advance of the Texas and Pacific railroad into a country that immediately sought a market at Shreveport, quadrupled its commerce and doubled its population in a short period.

In 1873 the population was variously estimated at between 8,000 and 10,000. Yellow fever again appeared this year about the middle of August, and, owing to the miserable sanitary condition of the city, which seems to have been totally neglected, the disease assumed a very malignant type and carried off about 800 people, among whom was an unusual proportion of the most prominent merchants. Two bankrupt menageries were camped in the heart of the city; one of them, reported to have come from Mexico, added to the filth, and at the same time a steamboat-load of cattle sank on a bar opposite the city. The carcasses of some of the drowned animals floated to the shore, where they festered in the sun, adding their stench to the prevailing pestilence, and probably augmenting its virulence. The existing authorities seemed paralyzed or incapable of appreciating the situation. A Howard association was speedily organized by men of experience and nerve, who were soon reinforced by the Howards of New Orleans in the person of the then president, followed by a skillful and capable corps of male and female nurses and several of the most distinguished and expert physicians. Lieutenant Woodruff, in charge of the United States engineer corps engaged above Shreveport in removing the great Red River raft, left the scene of his labors, lent efficient aid, and established a hospital in Tally's opera-house. His noble efforts exposed him to the disease, and, with many others, he sacrificed his life to the cause of humanity. The epidemic of 1873 was a serious blow to Shreveport, caused a loss of fully one-half its then existing wealth and population, and nearly destroyed its commercial relations with that portion of eastern Texas bordering on the Texas and Pacific railroad. The connection of the latter with the Iron Mountain railroad to Saint Louis, however, probably was the greatest cause of its loss. At present the effect has disappeared, and public confidence is now in a great measure restored. The population is rapidly increasing, and the disasters and disorders of the past are thought of only to guard against their recurrence.

With the exception of a cottonseed-oil mill, recently destroyed by fire and in progress of reconstruction on a larger scale, there are no extensive manufacturing industries in Shreveport. There are 2 large cotton compresses, capable of turning out 1,600 bales per day, and 7 large brick warehouses, with a capacity of 20,000 bales. During the past cotton year, ending September, 1880, the factors of Shreveport handled 120,000 bales of cotton.

SHREVEPORT IN 1880.

The following statistical accounts collected by the Census Office indicate the present condition of Shreveport:

LOCATION.

Shreveport is situated midway of the eastern boundary-line of Caddo parish, Louisiana, on Red river, 500 miles above its mouth, and in latitude $32^{\circ} 30'$ north, longitude $93^{\circ} 45'$ west from Greenwich. It is 60 miles below the point where the great Red River raft, removed finally in 1876, was located, and is 740 miles by water from New Orleans. Its mean height above sea-level is $307\frac{1}{2}$ feet, the lowest point, at edge of low water in the river, being 260 feet and the highest 355 feet above sea-level. The draught of water in the river varies from 35 feet during the highest stage to 2 feet at the lowest. The harbor capacity is 1 mile of water-front. The current in the river is 3 miles per hour. Water communication is open up the river to Fulton, Arkansas, and below with the Mississippi river and its navigable tributaries.

RAILROAD COMMUNICATIONS.

The city is on the Shreveport division of the Texas Pacific railroad, between Texarkana, Arkansas, and Eastland, Texas, with connections to all railroad points. The New Orleans Pacific and the Vicksburg, Shreveport, and Pacific, are now under construction toward this point, and the Memphis and Shreveport railroad has been chartered.

TRIBUTARY COUNTRY.

The country within a radius of 75 miles, including several small towns, is an agricultural district and is tributary to the city. Cotton, corn, all kinds of herbaceous plants, and fruits are grown. The soil in the river-bottom is very rich, while that in the hill-lands is generally poorer.

TOPOGRAPHY.

The soil under the site of the city is alluvial, ferruginous, clay, and sand. The variations in level are 100 feet, and there is good natural drainage into Red river and the adjoining lakes. The elevation of the surrounding country is 50 feet higher than the city. The marshes and ponds are gradually disappearing since the removal of the great raft. The lakes dry up in summer, as the river feeding them lowers its stage of water. The country, which was formerly well wooded, is now open. It is reported that a good many petrefactions are found in the surface of the soil.

CLIMATE.

Highest recorded summer temperature, 102°; highest summer temperature in average years, 98°. Lowest recorded winter temperature, 6°; lowest winter temperature in average years, 16°. The influence of the adjacent waters at low stages, and the marshes, tend to create malaria. The prevailing winds are from the south and are healthful.

STREETS.

There are 16 miles of streets in the city, 1½ mile of which is paved with broken stone, and 1½ mile with wood. The broken stone costs \$4 25 per cubic yard, laid down. The broken stone is preferred, but as good oak, well drained, lasts some time, and as rock is scarce, the wood pavement will finally supplant the other. The sidewalks are principally brick. In the main business streets, gutters are of stone, and in the balance of the streets they are simply ditches. No trees are planted, except by private individuals in front of their houses. The annual appropriation for streets is \$5,000, which includes repairs, construction, gutters, crossings, and removal of garbage. Day work is preferred when the same is in charge of an honest and capable street commissioner. There is one street-railroad, with a length of 1 mile, using 4 cars and 8 horses, and employing about 6 men. During the year 100,000 passengers are carried, and the rate of fare is 5 cents.

WATER-WORKS.

Shreveport has no water-works.

GAS.

The gas-works are owned by a private company. The daily average production is 200,000 feet. The charge per 1,000 feet is from \$3 50 to \$4. The city pays \$40 per annum for each street-lamp, 44 in number.

PUBLIC BUILDINGS.

The city occupies, for municipal purposes, the upper story of the market. The city hall and market-house, owned by the city, originally cost \$30,000. The county buildings in the city are owned and occupied by the parish authorities.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are 30 acres of parks in the city. Part of this area is occupied by private parks, used for picnics and like entertainments, and the remainder belongs to the city, but is not improved. The city paid some \$25,000 for the land. No appropriation is made for maintenance.

PLACES OF AMUSEMENT.

There is one theater in Shreveport—Tally's opera-house—with a seating capacity of 400. There are also 2 halls, seating 250 each. All exhibitions pay a license to the city, and the annual revenue from this source aggregates \$500. There is one beer-garden, seating 100 people, size 60 by 70 feet, open only in summer, and patronized exclusively by men. There is no singing or music in this garden.

DRAINAGE; CEMETERIES; MARKETS.

No information on the above subjects was furnished.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority of Shreveport is the board of health, an independent organization, composed of 5 members—2 physicians and 1 citizen being appointed by the governor and 1 physician and 1 citizen being appointed by the mayor by and with the advice and consent of the city council. The annual expense of the board in ordinary times is about \$2,000, for salaries of health officer and sanitary policeman, and for day scavenger-carts. In case of an epidemic the expense can be increased to any amount deemed necessary to meet the emergency, the board and city council in joint session making the assessment. In absence of epidemics the board has authority to execute all sanitary measures. During epidemics the law requires the concurrence of the city council in order to establish quarantine, after which the board has full power. The chief executive officer is the health officer, with an annual salary of \$500. His duties are to carry into effect the provisions of the act creating the board, to see that all health ordinances are carried out, and to execute all orders of the board; he is also secretary. One sanitary policeman is employed, who acts under the direction of the health officer. The board transacts its business as a deliberative body. Inspections are made regularly from house to house throughout the city. A complaint-book is also kept open at the health office, in which any and all nuisances can be entered, and such entries receive prompt attention. When nuisances are discovered or reported, the health officer, or sanitary policeman under his direction, immediately notifies the owner or tenant of the premises to abate the same, and refusal or neglect to do so within the time designated subjects the offender to fine in the mayor's court. So far the board has done little or nothing concerning the inspection and correction of defective house-drainage. There are neither privy-vaults nor cesspools nor sewers in the city. The board exercises sufficient control over the conservation and removal of garbage to prevent it becoming a nuisance. No body can be buried in or removed from the city without a permit from the health officer showing that all requirements have been complied with. The board has no regulations concerning the pollution of streams, but it controls the removal of excrement.

INFECTIOUS DISEASES.

Small-pox patients are isolated by being sent to the pest-house, situated 1 mile below the city, on the river-bank, in a very unfrequented place. Scarlet-fever patients are neither quarantined at home nor isolated, nor does the board take cognizance of the breaking out of contagious diseases in either public or private schools. Vaccination is not compulsory; it is done by the health officer gratuitously, on application.

All births, marriages, and deaths are required to be reported to the board for registry in books kept for that purpose.

REPORTS.

The board makes no reports, except a weekly mortality report to the secretary of the National Board of Health.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city with its regular force. The work is done wholly by hand. The cleaning is confined almost exclusively to gutters, and is thoroughly done daily in the main streets and alleys. The annual cost of the work is \$1,800, and the sweepings are dumped into the river. It is reported that the system is the only practical one for a city of this size, and that the river is an advantageous place for final deposit.

Removal of garbage and ashes.—Garbage is removed both by the city and by householders. Pending removal it is required to be kept in suitable vessels, and is taken at night by the *vidangeurs*. Ashes may be kept in the same vessel, and both garbage and ashes are disposed of in the same way, by being dumped into the river. The annual cost to the city is about \$900; the cost to householders is not given. In spite of sanitary ordinances the garbage is often thrown into open lots, streets, and gutters, where it is tramped into the soil. The mayor reports that the defect of the system is "the impossibility of a human all-seeing eye to prevent careless, thoughtless, and filthy people from violating the sanitary laws".

Dead animals.—The carcasses of all animals dying in the city are thrown into the Red river, the matter being under supervision of the police and the health officer. The cost of this service is included in the general street-work. It is remarked that the carcasses should be buried deep in the soil as a better means of disposal.

Liquid household wastes and human excreta.—Chamber-slops are thrown into privy receptacles, while laundry wastes and kitchen-slops are run into the gutters and ditches. These privy receptacles are either half-barrels, or else boxes 2 feet square and 18 inches deep. When full they are removed by regular licensed *vidangeurs*, who act under rules and regulations of the board of health, and the contents are dumped into the Red river. It is reported that these receptacles are poor, fall to pieces, and often deliver their contents into the streets and alleys. The dry-earth system is used only to a very limited extent.

Manufacturing wastes.—There is only one manufacturing establishment in Shreveport, and it delivers its waste into the river. Being situated above the city, the waste passes its front.

POLICE.

No information on this subject was furnished.

TEXAS.

AUSTIN,

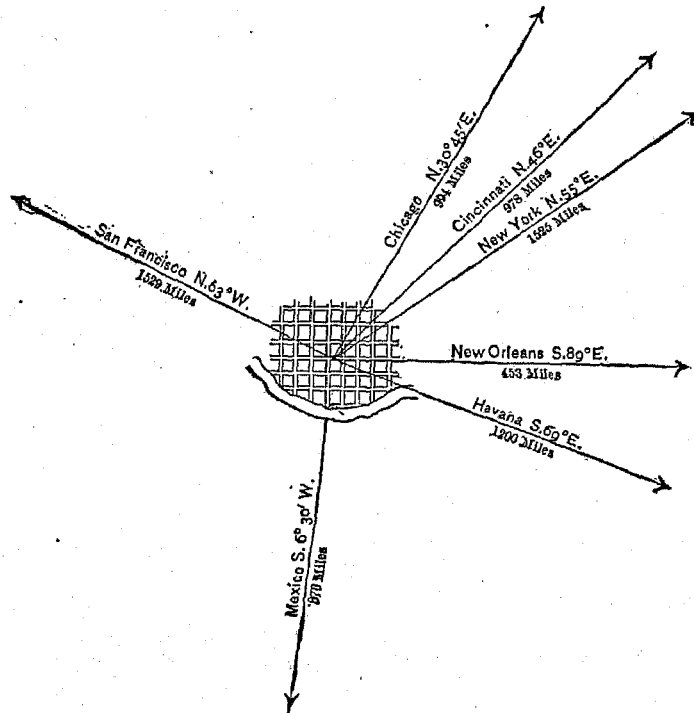
TRAVIS COUNTY, TEXAS.

POPULATION

IN THE
AGGREGATE,
1840-1880.

	Inhab.
1790	
1800	
1810	
1820	
1830	
1840	806
1850	*629
1860	3,494
1870	4,428
1880	11,013

* Exclusive of slaves.



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	5,473
Female	5,540
Native	9,628
Foreign-born	1,385
White	7,407
Colored	3,606

Latitude: 30° 6' 25" North; Longitude: 97° 43" (from Greenwich); Altitude: 376 to 718 feet.

FINANCIAL CONDITION:

Total Valuation: \$4,949,534; per capita: \$449 00. Net Indebtedness: \$106,744; per capita: \$9 69. Tax per \$100: \$1 90.

HISTORICAL SKETCH.

The declaration of independence of Texas having been made March 2, 1836, Houston was made the temporary capital. On the 14th of January, 1837, by act of congress, commissioners were appointed to select a proper site for the permanent capital. The conditions imposed were that the tract should lie between the Colorado and the Trinity rivers, and above the old San Antonio road; that it should be taken from public lands, by purchase or by donation, and that it should contain not more than four leagues and not less than one league of land; the price not to exceed three dollars per acre. The act provided for the appointment of an agent to lay out in town lots one square mile of the tract so selected, retaining a sufficient number of the most desirable lots for public buildings, and selling not more than half the remainder at public sale. The act provided that the capital should be called the City of Austin, in commemoration of Moses Austin, a former resident of Missouri, who inaugurated the first scheme for the settlement of Texas by colonization from the western part of the United States; a scheme which, after his death, was carried into effect by his son, Stephen F. Austin. After weighing the claims of different localities, the commissioners decided in favor of a hamlet containing then but two families, and called Waterloo, on the east bank of the Colorado river, where they purchased the land and made a report to the president, describing the same and its advantages. This report closed with the following:

The commissioners confidently anticipate the time when a great thoroughfare shall be established from Santa Fé to our seaports, and another from Red river to Matamoros, which two routes must almost of necessity intersect each other at this point. They look forward to the time when this city shall be the emporium of not only the productions of the rich soil of the San Saba, Pendernales, Hero, and Pecan bayou, but of all the Colorado and Brazos, as also of the produce of the rich mining country known to exist on those streams. They are satisfied that a truly national city could, at no other point within the limits assigned them, be reared up; not that other sections of the country are not equally fertile, but that no other combined so many and such varied advantages and beauties as the one in question. The imagination of even the romantic will not be disappointed on viewing the valley of the Colorado and the fertile and gracefully undulating woodlands and luxuriant prairies at a distance from it. The most skeptical will not doubt its healthiness, and the citizen's bosom must swell with honest pride when, standing in the portico of the capitol of his country, he looks abroad upon a region worthy only of being the home of the brave and the free. Standing on the juncture of the routes of Santa Fé and the sea-coast, of Red river and Matamoros, looking with the same glance upon the green, romantic mountains and the fertile and widely extended plains of his country, can a feeling of nationality fail to arise in his bosom, or could the fire of patriotism lie dormant under such circumstances?

A land agent was immediately appointed for laying out the land, and on the 1st day of August, 1839, the first sale of lots took place, the sales amounting to \$182,588. During the month of October the city grew rapidly; public as well as private building was energetically pushed to completion. On the 17th of this month the president, accompanied by a portion of his cabinet, arrived at Austin. General A. Sidney Johnson, secretary of war, and General Burleson, followed by a procession of citizens, met the president a few miles out of the city. The usual address of welcome was delivered, and festivities followed.

There had been erected for the use of the government a frame building, inclosed by a stockade, as capitol (on the present site of the city market), and on the opposite side of the hill another frame building, which served as an executive mansion, log cabins being built for the accommodation of the heads of departments.

The arrival of these officers gave a new impetus to the city; emigration poured in, and improvements progressed more rapidly than before.

During this same month the *Austin City Gazette* was started, and was followed soon after by *The Sentinel*. A reading-room was opened, and on the 11th of November, 1839, the first session of the fourth congress met at the capitol. A proposition was made agitating a change of the seat of government. A bill calling for a vote of the people to settle the matter was introduced, supported among others by General Houston, a congressman from the St. Augustine country. It was, however, voted down, and the question for a time remained at rest.

On the 13th of January, congress having incorporated the city of Austin, an election was held for city officers; and on the same day the first meeting of the supreme court of Texas was here held, the session occupying 13 days. The duties of the mayor of the city were not complicated, but consisted largely in keeping the community in a state of intelligent defense against occasional Indian raids, which were apprehended with reason, but which were never of a very serious character.

In the spring of 1840 a census of the city was taken, showing a total population of 806, of whom 550 were adult men and 150 were blacks. They were a heterogeneous assemblage, including representatives of almost every nation and profession.

During the year 1841 Austin continued to increase. The independence of Texas had been acknowledged by the United States, France, Great Britain, and Belgium. M. de Saligny, the French minister, with a scientific corps, had already arrived, and had built for himself the finest house then in Texas. His relations with the government were, however, of short duration. It appears that one of his servants had killed some pigs that annoyed him, which belonged to Mr. Bullock. Mr. Bullock whipped the servant, and thereby enraged the minister, who called upon Mr. Bullock and was ordered off the premises. The minister, conceiving that the honor of France had been compromised, demanded of the president that he rebuke Mr. Bullock. The president refused to interfere in a personal quarrel, and referred him to the civil authorities. The subsequent behavior of M. de Saligny was such that the president asked of the French government that he be recalled, which request was promptly granted. This petty quarrel became a matter of public interest, inasmuch as it led to the breaking off of negotiations for a loan about to be made by the French government to the government of Texas.

An election for president was held on the first Monday in September, 1841. Three names were prominent among the nominations: those of General Sam. Houston, David G. Burnet, and Governor Welsh. The latter promised, if elected, to serve for a salary of \$500 per annum, to pay his own expenses, and to do the public blacksmithing free of charge. General Houston was elected; and on the second Monday of December was inaugurated president of the Republic of Texas. He established many reforms, and enforced rigid economy. But, notwithstanding this fact, owing to loose regulations for the collection of customs (most of the goods consumed in the eastern part of the state being smuggled across the Sabine river), the public credit and the currency gradually improved.

Early in the spring of 1842 General Vasquez, at the head of 1,200 Mexican regulars, invaded Texas, sacking San Antonio on the 6th of March. A citizen escaping at sunrise reached Austin about dusk with the astounding news. Great energy was shown, and by the morning of the 8th Austin had mustered from 1,500 to 2,000 citizen soldiers. The president became greatly alarmed, and issued an order forbidding any soldiers to leave the city. He ordered the archives removed to Houston. In spite of his orders, however, many soldiers did leave for the front the same night. Meanwhile the government officers were rapidly preparing to leave the town, burying many of the

less important archives which they could not well carry away. The next morning the executive department and other officials departed for the lower country. The Austin soldiers, returning after Vasquez had been driven beyond the Nueces river, disbanded and returned to their homes, where they beheld a discouraging sight. The flourishing young city which they had left a month before, was now a straggling "deserted village". Four or five families and about 25 men only had remained. These, with the few who had previously returned from San Antonio, had organized for their own safety and for the security of the remaining government archives. A consideration of the position of affairs caused great exasperation. Over half a million dollars had been expended for land alone, and the value of their property was threatened, if not destroyed. In spite of the most earnest solicitation the president refused to return, and soon afterward issued a proclamation convening congress in extra session at Houston on the 21st of March. These measures decided the people of Austin to take the affairs of the city into their own hands. During the removal of the officials, the papers of the general land office had been left behind; these, the citizens determined to retain. The president sent a commissioner to remove these archives. He was sent back, with the information that the people of Austin considered that city the seat of government, and would not allow their removal. An archive committee and a vigilance committee were formed. And although the commissioner of the general land office retained charge of the archives, and was in sympathy with the government, he did not dare attempt their removal. So jealously were these archives guarded, that at times the baggage of persons leaving the city was examined. Late in September the president made several attempts to induce the people of Austin to allow the archives to be removed; but they persistently refused to do so. Dependent at this time, as they were, mainly on their rifles as a means of subsistence, their ammunition became exhausted. They applied to the officer in charge of the arsenal for ammunition for their actual needs. This being refused in the absence of a requisition, and the refusal being persisted in, they surrounded his house, got possession of the keys of the arsenal, helped themselves to what they required, and removed a howitzer, with its caisson and ammunition, placing them under guard in the shed near the corner of Congress avenue and Pecan street, intending to use the same as a means of defense and as the signal for the assemblage of the population.

In September of this year Mexico sent out a still more formidable invading army, under General Woll, who, at daybreak on the morning of the 14th, at the head of about 2,000 troops, entered San Antonio, meeting with little or no resistance. The district court was in session at the time, and so complete was the surprise that he captured the presiding judge and other officers of the court. The citizens of Gonzalez, receiving notice on the same day of the capture of San Antonio, mustered to the number of 80 and marched to meet the enemy. Others joined them on the road, augmenting their number to 220. Woll was drawn out from San Antonio by a skirmishing party, which he followed to the position of the Texans, on the Salado, about seven miles east of San Antonio, where, being decidedly worsted, he withdrew, having lost heavily. This action is supposed to have changed Woll's plans, and instead of advancing to Austin he continued his retreat to Mexico. Until the end of the year the peace of Austin was broken only by occasional Indian raids. On the morning of the 29th December, 1842, without warning of their approach, an armed force of 35 men had entered Austin, had reached the government buildings and loaded three wagons with the land-office archives before they were discovered. The citizens remonstrated, but the party announced their determination to take the archives to Houston, stating that they had an ample force outside of the town to carry out their purpose in spite of any opposition. They were informed that the people of Austin were as firmly determined to retain the archives; and some show of resistance was made, including a discharge of the captured howitzer; which, while ineffective as against the marauding party, assembled on the ground all within hearing of its report. The removing party started their teams for Bushy creek, pursued by a body of citizens whose progress was retarded by the attempt to carry the howitzer with them; so that they were not overtaken until nightfall, at their camp in the Bushy valley. On being overtaken, Captain Smith, who headed the party removing the archives, endeavored to effect a compromise. He was informed that nothing short of the return of the archives would be listened to. This he refused. However, the next morning he again visited the camp and became satisfied from their tone and numbers that it was useless to resist them; he proposed to turn the documents over to them. It was insisted that he should carry them back himself to Austin, which he finally agreed to do. As both parties were on their way back, Captain Smith's men, being mounted, left the road under pretense of watering their horses, and did not return. On the arrival of the citizens with the recovered archives there was great rejoicing. This is substantially all of what is known in Texas as the "Archive war", an episode which, while trifling in itself, doubtless determined the permanent maintenance of the capital at Austin, no further efforts having been made to get control of these most important papers. During the summer of 1843 the Indians increased their hostility and activity. Provisions became very scarce; shoes and clothing were mostly of home manufacture and of the rudest character, and there was great suffering on all hands. The status did not improve during the subsequent year. In 1844 there was a new election of president. The great question now agitating the whole of Texas related to its annexation to the United States. In 1836 that government had declined to take Texas, doubting its ability to maintain its independence. The sentiment in its favor, however, had been growing in the meantime, and the Congress which met in 1844 adopted measures looking to the accomplishment of the purpose. The question was introduced into the United States Senate by Mr. Calhoun, in April, 1844, but was defeated. In the presidential election of this year, the annexation of Texas became a leading issue; and on this issue Mr. Polk was elected.

On the 1st of March, 1845, a joint resolution of Congress to admit Texas into the Union was passed, and received the signature of President Tyler. The Texan congress assembled at Austin on the 4th of July, 1845, and on the first day of its session the annexation bill was passed, and Austin was recognized as the seat of government until 1850. The first state legislature assembled in Austin, and on the 19th of February, 1846, President Jones handed over the executive authority to J. Pinckney Henderson, the first governor of the new state of Texas. Immediately after the annexation a considerable influx of settlers was noticeable. Most of them were without means, and added little to the immediate material wealth of Austin. The old settlers had unshaken faith in the future of the city, and continued to make such improvements as their small means permitted. Lots increased in value, new surveys and subdivisions were made, and the city gradually extended its limits. In accordance with the provisions of the state constitution, an election was held in 1850 to determine the location of the capital for twenty years, resulting in favor of Austin. About the beginning of 1851 the necessity for providing churches and school-houses had become manifest, and several of these edifices were erected. At about the same time a number of business men were attracted to Austin, and several substantial brick and stone buildings were constructed. An attempt was made to establish steam navigation on the river, but the difficulty of navigation and the limited demand for such service soon caused regular trips to be abandoned. Communication with distant points was established, and the surrounding country gradually became settled. The prosperity of Austin continued to increase steadily until 1861, when the breaking out of the war of the Rebellion checked all improvement and had a very depressing effect on trade, which thenceforth for some years was confined mainly to traffic with Mexico.

During the war Austin contributed largely in men and means to the confederate army. The close of the war found all of its interests and industries very greatly depressed, and no material progress was made thereafter until it became certain that a projected railroad would make Austin its terminal point. This gave an impetus to the growth of the city, such as it had not known before. After the building of the Houston and Texas Central railroad, in 1871, the place began to develop into a city. Prosperity appeared on every hand, and the population increased to about ten thousand, more than double that of the year before.

In 1877 Austin had grown to a population popularly estimated at 16,000, and had become a regularly laid-out city, with blocks of buildings of considerable pretensions. "Hundreds of costly residences greet the eye on every side; a dozen church spires point aloft to the clouds; institutions of learning to prepare the youthful mind for the duties of maturer years are numerous. The daily papers carry the news from all quarters of the globe to their thousands of readers, while the hum of the mill-wheel, the ring of the anvil, and the scream of the steam-whistle attest the already developing manufacturing interests of the city." The city directory of that year gives account of 13 churches, 10 educational establishments of considerable pretension, beside 11 private schools, Masonic lodges, Odd Fellows' lodges, Hebrew associations, and other secret and benevolent societies, water-works, gas-works, a city railway, two ice companies, shooting clubs, theaters, halls, and four newspapers.

AUSTIN IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Austin:

LOCATION.

Austin lies in latitude $30^{\circ} 6' 25''$ north; in longitude $97^{\circ} 43'$ west. Its elevation above the sea-level is at an average of about 550 feet. The Colorado river, on which the city lies, is not navigable. The low-water level of the river at the foot of Congress avenue is 376 feet above mean coast-tide. The summit of Mount Bonnell, three miles back, is 718 feet.

RAILROAD COMMUNICATIONS.

Austin is touched by the following railroads: The Houston and Texas Central railroad, terminus at Sherman, Texas; the International and Great Northern, termini at Longview and San Antonio. The latter is being fast pushed beyond San Antonio to the Rio Grande, and northward to connect with the main western railway system.

TRIBUTARY COUNTRY.

The country immediately tributary to Austin is mainly agricultural. The soil on the rivers and stream margins is alluvial. On the table lands it is argillaceous, and rich with vegetable matter. Both of these soils are of great fertility. Within a radius of about five miles nearly one-half the country is considerably wooded. The underlying rock is cretaceous limestone, especially adapted for building purposes. The region is very undulating, the average in the district immediately about the city being about 500 feet.

TOPOGRAPHY.

The following statement concerning the topography of Austin is condensed from notes furnished by John W. Glenn, C. E., Austin, Texas:

The city is situated on the Colorado river. The floor of the railroad bridge crossing the river is 451 feet above mean tide. The principal part of the city is about 150 feet higher than this. The natural drainage of the city is perfect in all parts. Johnson's creek, Shoal creek, and Waller creek give a rapid discharge for the drainage of an area of about ten square miles, which passes through the city limits. Congress avenue, West creek, Raymond's creek, and Pease creek are important auxiliary channels. The Colorado river is a rapid, clear stream, especially adapted to receive and carry away rapidly any sewage that may flow to it from the city. On the other side of the river there is a series of large springs, which are sufficient to supply a city of half a million with excellent water. The country to the northwest is broken; some of the summits, locally called "mountains", reaching an elevation of over 300 feet above the highest point of the city. To the northeast, south, and southwest the country is more level and extremely fertile. There are no marshes, ponds, or lakes in the vicinity. The agricultural character of this district is indicated by the fact that in the average of years it produces three-quarters of a bale of cotton, 30 bushels of corn, 20 bushels of wheat, or 75 bushels of oats per acre. Hay from the sweet bottom-grass is yielded at a rate of from three to four tons per acre. The usual garden products are abundantly produced, and pears, peaches, plums, raspberries, and melons thrive.

CLIMATE.

The highest recorded summer temperature is 106°. The highest summer temperature in average years, 88°. The lowest recorded winter temperature, 6°. Lowest winter temperature in average years, 46°.

During the summer season the city is subject to the tropical trade-winds.

STREETS.

Total length, 72.63 miles. None of the streets are paved, but about three-quarters of a mile of Congress avenue is finished with broken stone.

The city is hilly, the surface-drainage is active, and the soil is mostly gravel, so that the streets are maintained in a fair condition at very little cost. The amount expended during the fiscal year ending November 2, 1879, for grading and repairing streets and building bridges, was \$12,505 59.

The streets become muddy under heavy rains, but a few days of sun and wind restore them to good condition. On Congress avenue and Pecan street the sidewalks are paved with limestone slabs. These are the only finished sidewalks of any considerable extent. On these two streets the gutters are made with cobble-stones, and are set with limestone curbs, 6 inches thick and 18 inches deep. The city has very few trees in the streets, and no grassed places. By the city ordinances all street work amounting to over \$100 must be done by contract, and this system is considered advantageous. There is a horse railroad one and one-half mile in length, with 6 cars, 14 horses, and 9 employés. The total number of passengers carried during the year was 20,000, and the rate of fare is 5 cents. There are no regular omnibus lines. The works for water-supply are the property of a private corporation. The reservoir is 2½ miles from the pumping station, and has a capacity of 2,500,000 gallons. The pressure in the street mains is from 65 to 85 pounds. The water is elevated by 2 Blake steam-pumps, the average pumping being 450,000 gallons per diem. The gas-works are owned by a private corporation. The average daily production is 15,000 cubic feet. The charge per thousand is \$4. The city pays \$40 per annum for each street-lamp, 100 in number. The income from private meters and from street-lamps is given as \$18,000 per annum.

PUBLIC BUILDINGS.

The city owns and occupies for municipal uses, wholly or in part, 2 engine-houses, 1 hook-and-ladder house, and 1 combined market-house and city hall, which cost \$13,616 29. The total cost of the municipal buildings belonging to the city is \$17,117 29.

The state and county buildings are separate from those occupied by the city.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The total area of the public parks is 29.8 acres. There are 4 small parks, as yet without names, located in different parts of the city proper, each containing 1.7 acre. *Pease Park*, in the northwest quarter of the city, contains 23 acres. These parks are as yet entirely unimproved. The land was donated to the city; the single appropriation of \$500 for their improvement has not yet been expended.

PLACES OF AMUSEMENT.

Millett's opera-house has a seating capacity of 1,400. Smith's opera-house has a seating capacity of 700.

Jones' commercial library, in which weekly concerts are given, has a seating capacity of 500.

Tip's hall, the meeting room of the Austin Männerchor, has a seating capacity of 700.

Theaters pay a license when an admission fee is charged. The revenue from this source is \$250 per annum.

Scholz's hall and beer garden have a seating capacity of 300 in the hall and 250 in the garden. This hall is held by the Germania society and is well patronized, though no statistics on this point are furnished. The cost of its construction is not given.

The Turner hall and beer garden, constructed in 1872 at a cost of about \$20,000, including land purchased, has a seating capacity of 400 in the hall and about 4,000 in the garden.

CEMETERY.

Austin has a public cemetery which is the property of the city and under the charge of the public sexton, an officer appointed by the mayor, who is required to give bonds of \$1,000 per annum for the faithful performance of his duty. Ground in the cemetery is sold to private persons, the price for a single grave being five dollars, with increasing rates up to a full block at \$50; the deed of sale is made by the mayor.

By ordinance—

The sexton shall keep a map or plat of the portions of the cemetery not divided into blocks or lots, and also a record-book of the same; and, whenever any burial of any stranger, pauper, or other person shall have been made in such portion, shall make a record of the same, giving a description of the spot, the name of the person so buried, if known, and mark the same upon his map to show that the interment has there been made, and report the same to the city clerk.

The sexton shall receive within the cemetery no corpse unless the bearer or bearers thereof shall deliver to him the certificate of a licensed physician, or of the mayor, or some magistrate or coroner, containing a statement of the place from whence taken, the cause of death, sex, color, and the name of each, if known. And if the bearer or bearers, as aforesaid, shall refuse to give the certificate as above, or if the body be borne to another place for burial, after application as above to the sexton, the sexton shall notify the mayor of the fact at once in order that he may proceed to inquire if any crime has been committed.

The sexton shall faithfully inter in their appropriate places the dead bodies of all persons properly presented to him for interment; he shall prepare the ground for their reception in a proper manner as promptly as possible, taking care that no grave shall be less than four feet in depth; he shall superintend the depositing of the body and refill and properly finish the grave after the body has been buried, and preserve order and quiet while the same is being done, and for his services shall be entitled to the following fees:

For digging grave and for the interment of persons buried at the cost of the city.....	\$2 50
For digging grave and interment of other persons, to be paid by the person contracting therefor.....	5 00
For superintending the work of interment where the work is done by others.....	2 00
For disinterment, removal, and reinterment of a body, for the whole work.....	15 00

which shall in all cases include the cost of removing the dirt and cleaning up the streets.

It shall not be lawful for any person to have a grave dug or a body buried in the city cemetery without the knowledge and approval of the sexton, nor upon any ground therein, without the written consent of the person owning or controlling the same; and if a grave be so dug or a dead body so buried in places not purchased by the person so digging and burying, or by those under whose authority he acts, the sexton shall cause the grave to be closed or the body to be disinterred and buried in that portion of the cemetery set aside for the interment of strangers. And the sexton's fees therefor shall be collected as other costs against the person or persons so offending.

It shall not be lawful for any person to disinter, or remove from any grave or vault in the city cemetery, any dead body, or any of the articles thereto belonging, except upon the written consent of the nearest friends of the deceased, the written order of the mayor, and under the superintendence of the sexton.

The mayor may, using a sound discretion, order the burial in the city cemetery of the dead body of any pauper or person thrown upon the care of the city, without friends, at the cost of the city.

The ordinances also make the usual provisions for the protection and care of the cemetery.

MARKETS.

A considerable tract of land in Austin was set apart by the legislature of the state of Texas in 1856, to be used exclusively and permanently as a city market. Its regulation is in the hands of the city council.

Concerning the leasing of the stalls there is this somewhat unusual provision:

The lessee or lessees shall pay in cash at the time of renting said stall or stalls one-half of the amount bid for the same, and shall at once execute his or their promissory notes, with at least two good and solvent securities to be approved by the mayor, for the payment of the remaining one-half of the amount on the 31st day of August, or the 28th day of February, as they may have rented for the six months beginning March 1 or September 1; said notes shall bear interest at the rate of ten per cent. per annum from date until paid.

The ordinance contains the following provisions:

All fresh meats, fish, or vegetables intended for the people of the city shall be brought to the city market, or to some other market established by the city council, as hereinafter provided, to be sold or disposed of during market hours: *Provided*, That any person shall have the right to sell butcher's meat in quantities not less than the whole animal, or any produce of his own soil, or game killed by him, or fish caught by him, anywhere in the city, after market hours: *And provided further*, That any licensed butcher may deliver butcher's meat to his regular customers anywhere within the city at all times, provided the same shall first be exposed in the market for the inspection of the market-master.

It shall not be lawful for any person to establish any slaughter-house in this city, or to slaughter any animal for butcher's meat within the limits of the said city, except for the use of the person so slaughtering.

Immediately and within one-half hour after the closing of the city market on each day, each lessee shall scrape, wash, sweep, and thoroughly cleanse every part of the stall or stand occupied by him or her, and to the middle of the hall or pass-way in front thereof, and shall keep the same in the highest state of cleanliness. And they shall within the same time remove their tubs and barrels containing refuse matter, and shall thoroughly cleanse the same before returning them to the stall. Said lessee or lessees shall be neat and clean in their personal appearance while in attendance at the stalls; butchers shall not be permitted to wear bloody, greasy or soiled clothes, or such as they may have worn while butchering.

No person shall be permitted to hawk, peddle, or sell any kind of goods, wares, or merchandise in said city market, or on the sidewalks and footways surrounding the same, except as herein provided.

Within one-half hour of the closing of the market on each day, all meats, poultry, vegetables, fish, and other articles left over and not sold shall be removed from said market, and the same shall not be returned thereto until the hour provided for.

The other provisions of the ordinances relate to the usual rules and precautions of city markets in warm climates.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief health organization of Austin is a board of health appointed by the mayor, consisting exclusively of physicians. There are 5 members who work without compensation. The president receives a salary of \$600, but as city physician, not as president of the board. So far as any increase of expense during an epidemic is concerned, the board can act only to the extent of making recommendations to the board of aldermen. In the absence of epidemics it has authority to abate nuisances, and take charge of contagious or infectious diseases. Its authority, by law absolute, is really greatly limited by the fact that it is dependent on the city council for funds with which to carry out its enactments. During epidemics, with the possible restriction above mentioned, its power is absolute.

HEALTH ORDINANCES.

ARTICLE 271 (2). It shall be the duty of the health physician to see that all the provisions of the ordinances of the city relative to health are strictly complied with; and to this end he shall have power, concurrent with the city marshal, to see that the health inspectors and policemen perform their duty faithfully in ascertaining and making complaint against the authors of all nuisances. He shall superintend the city hospitals, visit the city work-house and jail, and take charge of and attend all cases of disease or accident certified to him by the mayor as demanding medical attention.

ART. 272 (3). It shall be the duty of the health physician, whenever, in his opinion, any thing, or state of things, in this city is or may become a nuisance, or dangerous to the health of the city, to certify the same to the mayor, who shall, if necessary, order the city marshal to cause the same to be removed, corrected, abated, or destroyed; and thereupon it shall be the duty of the city marshal to notify the author of said nuisance, or the person owning or controlling the property or thing which is or may be liable to become a nuisance, to remove, correct, or abate the same; and in case of the refusal or failure of said person to comply with such notice, it shall be his duty to cause the same to be done, calling such assistance as may be necessary therefor, and all costs attending such action shall be charged to the author of said nuisance, or to the person owning or controlling the property on which the same exists, and said costs shall be collected as other costs: *Provided*, That nothing herein contained shall be so construed as to prevent a proceeding against the same party or parties for any misdemeanor of which they may have been guilty in the premises.

ART. 273 (4). It shall be the duty of the health physician to keep himself advised of the existence of any pestilential, contagious, or infectious diseases at all ports or other places within the state; and if at any time there may, in his opinion, be danger of such disease being introduced into this city, he may require the owner, driver, conductor, or person or persons in charge of any railway car, engine, or train, stage coach or wagon, carriage, or other vehicle, or any person or persons whatever, to remain in quarantine at such place or places and for such period as the city council may direct.

ART. 274 (5). It shall be the duty of the health physician, whenever he is informed of the existence of any pestilential, contagious, or infectious disease within this city, to cause the person or persons so diseased to be taken to such place as he may designate, away from all probable danger of communication, for treatment; and such place shall become a pest-house, and shall be under exclusive control of the health physician, who shall issue such orders as will, if possible, prevent the spread of such disease.

ART. 275 (6). It shall be the duty of every physician, hotel-keeper, or other person in this city to report at once to the health physician any case of pestilential, contagious, or infectious disease which may in any manner come to their knowledge.

ART. 276 (7). It shall not be lawful for the owner, driver, conductor, or person in charge of any engine, car, train, stage, carriage, or other vehicle whatever, to bring to or transport within this city any person afflicted with any pestilential, contagious, or infectious disease, or any property whatever infected with the same.

ART. 277 (8). The health physician may establish such sanitary regulations for the government of places under his charge as he may deem necessary, with the consent of the city council, and it shall not be lawful for any person to violate such regulations when so established, nor at any time to interfere with or hinder the health physician in the discharge of his duty.

ART. 278 (9). Whenever it becomes necessary, for the preservation of health or the prevention of disease, to use any disinfectant, or to use any other precaution therefor, the mayor may, by consent of the council, order the same to be done, and it shall be deemed a misdemeanor for any person in this city to fail or refuse to obey such order.

ART. 280 (11). The mayor may, by and with the advice and consent of the board of aldermen, whenever it is deemed necessary, appoint health inspectors for the city, to the number of one for each ward, who may be removed at any time by the mayor or the city council, and whose compensation shall be the same as that of policemen.

ART. 281 (12). It shall be the duty of the health inspectors to ascertain every nuisance which may exist in this city, or in the ward or wards to which they may be assigned, and forthwith have the same corrected, or abated, or reported to the proper officer. And in the discharge of their duties they may enter upon any premises or into any house in this city where they may have reason to believe any nuisance may exist, may examine into the condition and cleanliness of any premises, inspect vaults, privies, stables, and other outbuildings, and shall execute all orders of the council, mayor, or health physician.

ART. 282 (13). The word "nuisance", as used in this connection shall be understood to mean anything whatever that may be liable, or about to become liable, to affect the health or comfort of the people of the city of Austin; and it shall be the duty of the health inspectors to report, as such, all premises, houses, vaults, privies, sinks, stables, smoke-houses, lumber-rooms, undrained grounds, stagnant water, hog-pens, barn-yards, cemeteries, slaughter-houses, hotels, boarding-houses, restaurants, market-houses or stalls, streets, alleys, sidewalks, or other grounds, houses, or premises, and all pestilential, contagious, or infectious diseases in man or animal, or whatever may, in their opinion, be liable to affect the health of the city.

ART. 283 (14). Any person or persons violating any of the provisions of the preceding articles relative to health regulations shall be deemed guilty of a misdemeanor, and on conviction shall be punished by fine, or otherwise, as in other cases of misdemeanor.

SANITARY INSPECTOR.

The board is assisted in its work by one inspector who acts as market-master and health-inspector. He has police powers not only in sanitary matters, but in all respects the same as the regular police. His duties include the inspection of all parts of the town and the abatement of nuisances. He has full power to prosecute for the enforcement of the penalties of fine and imprisonment.

HOUSE-DRAINAGE.

There is no law or custom concerning the inspection and correction of defective house-drainage, privy vaults, cesspools, sources of drinking water, etc. But the inspector has power, and it is his duty, to look after cesspools and privies, and to order them emptied when necessary. He has also the general supervision of streets.

GARBAGE.

The board exercises no control concerning the conservation and removal of garbage, further than to prevent its being scattered or deposited in the public streets.

BURIAL OF THE DEAD.

No interment is permitted unless the certificate of the attendant physician is delivered to the sexton. He makes monthly returns of these certificates to the president of the board of health.

INFECTIOUS DISEASES.

Small-pox patients are removed to the pest-house, outside the city limits. Scarlet-fever has never been an epidemic in Austin, and there is no custom relating to the isolation or home quarantine of patients.

The board takes no cognizance of the breaking out of contagious diseases in public and private schools.

Vaccination is not compulsory, but at certain seasons it is done at the public expense on application of the city physician.

There is no system of registration of diseases, births, and deaths beyond the recording of the physician's certificate for burial.

REPORTS OF THE BOARD OF HEALTH.

The board reports to the board of aldermen at each of its meetings, which occur as occasion requires.

In seeking for information concerning the board of health, indications were found that it may be much hampered in its action by the dissent of the city council, and of physicians who are not members of the board. Nominally the power of the board is all that is necessary; but virtually the co-operation of the mayor and council is necessary for its best efficiency.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city, and by its own regular force. The work is done by hand, no sweeping-machines being used. The work is performed every day or as required; and in connection with the natural cleansing due to the rapid slope, and thorough washing of the streets by storms, it is efficient. The cost of the work is about \$1,250 per annum. Matters removed from the streets are deposited outside the city limits.

Removal of garbage and ashes.—Garbage is removed by householders, and ashes by the city's own force. The regulation concerning the conservancy of garbage requires that it be kept in barrels, and that these be emptied, and the garbage removed within twelve hours. It is permitted to keep ashes and garbage in the same vessel, though ashes are often used in the disinfection of privy vaults. The cost of removal, so far as it is done by the city, is included in the cost of street-cleaning. It is thought that no injury to the public health results from the improper keeping of garbage on premises, from infrequent removal, from improper handling, or from improper final disposal.

Dead animals.—The owner is required to remove the carcass of any animal dying, to a point at least one thousand yards beyond the city limits, immediately after its death. Failure in this respect subjects the offender to a heavy penalty. If the owner is not known, the carcass is removed by the city's force. There is no record of the cost of this service, and the number of animals removed, irrespective of dogs (of which about 600 die annually), is about 50.

Liquid household wastes.—There are no sewers in Austin. Laundry and kitchen wastes may be run into the street gutters; chamber-slops being usually deposited in privy vaults. Dry wells or cesspools other than privy vaults are not used. The gutters are flushed as occasion requires; at some seasons as often as two or three times each week, and at others not more than once a month. Drinking-water is stored in tight cisterns; and in so far as these are actually tight, no contamination arises.

Human excreta.—There are few if any water-closets in Austin, the use of vaults being universal. In the more thickly settled parts of the city it is stated that these vaults are tight boxes. The only regulations concerning the construction and emptying of privy vaults relate to their depth and location.

Privy vaults are under the direct supervision of the health inspector, who, when occasion requires, orders them emptied by the licensed scavenger, between the hours of 12 midnight and 4 a.m. The matters removed must be deposited like garbage at least one thousand yards outside the city limits. There is no law concerning the use of night-soil as a manure; but such use is at least very rare. There is no manufacturing in the city of such a nature as to require regulations concerning the disposal of its wastes.

POLICE.

The police force of Austin is under the charge and command of the city marshal, and the service is administered in accordance with ordinances making the usual provisions. The only one of these ordinances which seems peculiar to Austin is as follows:

Every policeman of this city shall, and any citizen may, have a police-whistle; and it shall be the duty of any policeman hearing any such whistle blown to go to the relief of any person blowing the same. But it shall not be lawful for any policeman or other person to blow any such whistle for any trivial cause, nor unless the presence of the policeman is actually necessary for the performance of some duty herein required.

The annual report of the city marshal for 1879 is as follows:

The police force of the city of Austin consists of nine men, and are distributed as follows: One officer on duty at the police office; one mounted officer patrolling the city at night; one officer guarding and working the city prisoners, the balance being on patrol duty at night in different parts of the city.

There have been arrested by the police force from the 20th of October, 1878, to the 19th October, 1879, 1,114 persons; of which 851 were fined, 205 dismissed, and 13 appealed to the county court, 40 were transferred to justices' courts, and 5 to the United States court.

The fines for the above year amounted to \$6,280; amount of cash collected, \$3,865 80; amount of fines worked out, \$2,414 20. Value of stolen and missing property reported at police headquarters, \$5,472, of which \$3,307 were recovered by the police and returned to the owners.

CHARITABLE INSTITUTIONS.

[Information furnished by Rev. Fred. H. Wines, special agent.]

The city of Austin is the seat of three of the state charitable institutions of the state of Texas, namely, the State lunatic asylum, the Texas deaf and dumb asylum, and the Texas institution of learning for the blind.

The State lunatic asylum was opened in the year 1861. It is governed by a board of 5 managers appointed by the governor. It can accommodate 350 patients comfortably; but the number present June 1, 1880, was 373. The lands, buildings, and improvements, including furniture, cost about \$300,000, and the annual cost of maintenance is \$60,000 or \$65,000, which is principally met from the state treasury. The amount of land owned by the institution is 106 acres. Dr. W. E. Saunders is the medical superintendent.

The deaf and dumb asylum received its first pupil in 1857. The legislature, in 1856, made a grant of 100,000 acres to this institution, of which about 15,000 acres were sold, under an act of 1874, for \$22,440. The remainder is estimated to be worth from \$125,000 to \$150,000, and constitutes, with the proceeds of the former sale, a permanent endowment fund. The legislature also makes annual appropriation for the support of the establishment, which costs for maintenance \$12,000 or \$15,000 a year. The number of pupils in attendance June 1, 1880, was 61; but the institution is of sufficient capacity to receive 100. The buildings and grounds cost about \$40,000. Mr. John S. Ford is the superintendent, and under his direction the pupils are instructed not only in the elements of an English education, but in several handicrafts, such as printing and shoemaking.

FINANCIAL STATEMENT.

The following is taken from the annual report of the mayor for 1879:

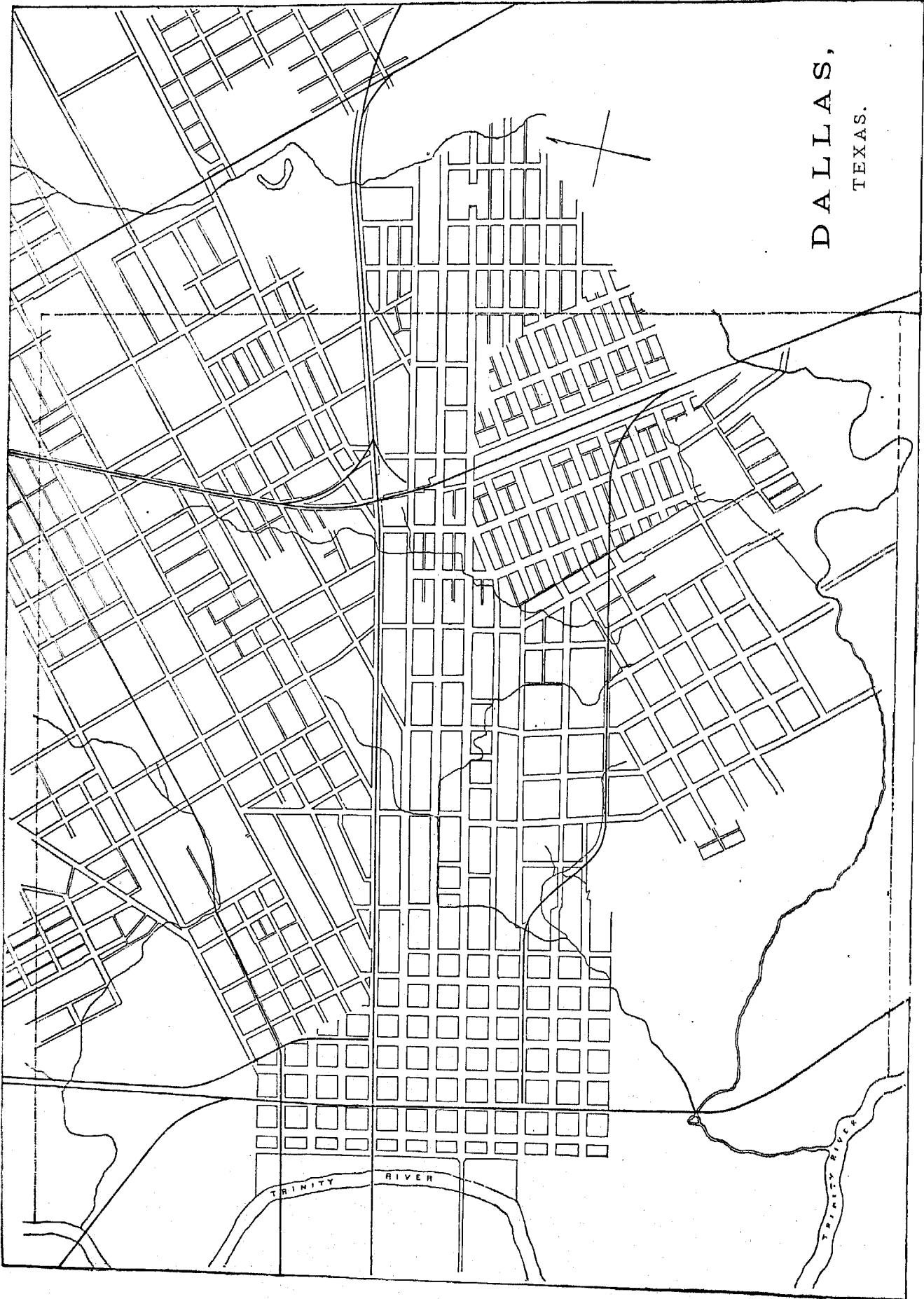
Amount of warrants outstanding October 20, 1879.....	\$14,805 76
Cash in city treasury October 20, 1879.....	5,881 61
Bonded indebtedness of the city October 20, 1879.....	91,900 00
Ad valorem tax collected of 1877 to October 20, 1879.....	752 28
Ad valorem taxes collected of 1876.....	231 25
Back taxes collected to October 20, 1879.....	693 33
Ad valorem taxes collected for the year 1878 to October 20, 1879.....	47,689 48
Ad valorem taxes collected for the year 1879 to October 20, 1879.....	752 17
Ad valorem taxes uncollected for the year 1879, now due.....	43,793 63
License collected to October 20, 1879.....	10,217 00
Income from market-house to October 20, 1879.....	1,417 05
Income from cemetery to October 20, 1879.....	882 50
Fines from mayor's court to October 20, 1879.....	2,595 80
Income from ground rent to October 20, 1879.....	190 00
Income from dog-tax to October 20, 1879.....	5 75
Income, miscellaneous, to October 20, 1879.....	108 20
Cash on hand October 20, 1878.....	7,560 15

SOCIAL STATISTICS OF CITIES.

Expenses of the city for the year ending October 20, 1879.

Fire department	\$7,504 39
Streets and bridges.....	12,505 59
Miscellaneous.....	1,127 42
Market-house	941 55
Printing, postage, and stationery.....	1,025 63
Charity	2,132 73
Police	8,814 17
Sanitary.....	1,465 10
Salaries of city officers	6,493 31
Commissions of city assessor, collector, and city attorney.....	1,384 98
City cemetery.....	563 57
Street lamps	6,415 20
Water rents	5,647 94
Interest	10,429 85

DALLAS,
TEXAS.



DALLAS,

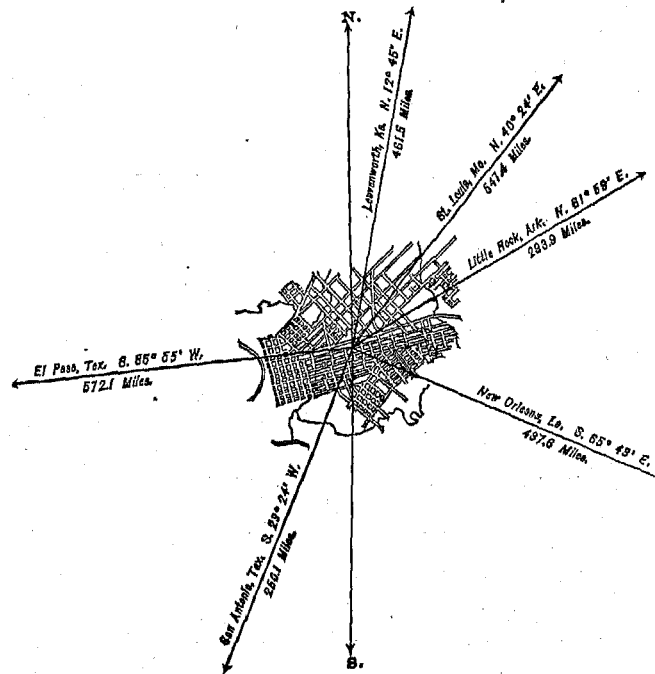
DALLAS COUNTY, TEXAS.

POPULATION

IN THE
AGGREGATE,

1880.

	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	
1840.....	
1850.....	
1860.....	
1870.....	
1880.....	10,358



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	5,462
Female	4,896
Native	9,035
Foreign-born	1,323
White	8,431
Colored	*1,927

* Including 6 Chinese.

Latitude: 32° 45' North; Longitude: 96° 46' (west from Greenwich); Altitude: 510 to 600 feet.

FINANCIAL CONDITION:

Total Valuation: \$3,585,379; per capita: \$346 00. Net Indebtedness: \$304,354; per capita: \$29 38. Tax per \$100 00: \$3 00.

HISTORICAL SKETCH.

Eight years ago the present prosperous city of Dallas was a little village of perhaps 1,500 inhabitants, contented and well-to-do, who little expected that their city, which had been thirty years in reaching the point at which they saw it, would in less than ten years increase over six times in population, while in importance it would pass from a quiet village to a thriving city.

Dallas was founded in 1841 by John Neely Bryan, but settlers did not come in any numbers until 1844, when many emigrants from Virginia, Kentucky, Illinois, and Missouri established themselves there and built up around themselves a quiet town. Dallas county was organized in 1846, and the little town of Dallas, which was almost exactly in the center of the county, was made the shire town. Such importance as this fact gave it was the only

distinction the town could boast. In 1860 a large part of the town was destroyed by fire. After the close of the war Dallas again assumed its quiet way, repaired its losses, and laid the foundation for the rapid growth which began in 1872 with the completion of the Houston and Texas Central railroad to Dallas, when the city sprang at once into importance. In little more than a year the population had increased from 1,500 to 7,063. Manufactures were established and trade was extended. Increased importance was given by the extension of the Texas and Pacific railroad to Dallas. The city now has a population of 10,358. There are 6 large flour-mills, an extensive cottonseed-oil factory, 2 iron foundries, 3 planing-mills, several broom factories, and other flourishing manufacturing establishments. Dallas is lighted by gas and supplied with water; it has 3 daily and 7 weekly newspapers. There are 20 churches—14 attended by white and 6 by colored congregations.

DALLAS IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Dallas:

LOCATION.

The city of Dallas is situated in latitude $32^{\circ} 45'$ north, longitude $96^{\circ} 46'$ west from Greenwich, on the east bank of the Trinity river, 3 miles below the mouth of Elm Fork. The average level of the city is 520 feet above the level of the sea, the lowest point being 510 feet, the highest 600 feet above the sea-level. The Trinity river is not navigable at this point.

RAILROAD COMMUNICATIONS.

Three railroads enter Dallas, as follows:

The Houston and Texas Central railroad, termini Houston and Denison.

The Texas and Pacific railroad, termini Texarkana and Eastland.

The Dallas and Wichita railroad, termini Dallas and Denton.

Other railroads are fast being extended toward the city.

TRIBUTARY COUNTRY.

Dallas is situated in the midst of the richest agricultural district of the state. The soil is what is known as "black waxy loam", and is very fertile. The city is the wholesale depot for the whole of northern Texas.

TOPOGRAPHY.

The city is built on a sloping prairie, ranging from 60 to 150 feet above the Trinity river. The soil is of black loam, or sand, underlaid by limestone, which lies from 3 to 10 feet below the surface. The natural drainage is excellent. The surrounding country is generally higher than the city. There are no marshes or lakes in the vicinity. Except on the east, the country is wooded.

CLIMATE.

The highest recorded summer temperature is 102° ; the highest summer temperature in average years is 96° . The lowest recorded winter temperature is 28° ; the lowest winter temperature in average years is 38° . The elevated lands about the city protect it from the severe winter winds, while breezes from the gulf of Mexico temper the summer heat and make the climate pleasant during the hot season.

STREETS.

Dallas has in all about 90 miles of streets, 6 miles of which are paved with gravel and 1 mile with broken stone. The cost of the broken-stone paving per square yard was about \$2; of the gravel, 50 cents. The total cost of repairs on the streets is \$15,000 annually. The sidewalks are of all kinds of material—gravel, plank, brick, concrete, stone flags, asphalt, and artificial stone. The street-gutters are of either plank, stone, or cast iron. Shade-trees are planted along many of the streets, and the municipal authorities encourage the planting by offering a bounty of \$2 for each tree so set out after it has reached two years' growth. Work on the streets is done by the day, no contracts having been made for several years.

There are 4 horse-railroad lines. The total length of track is $9\frac{1}{4}$ miles. The lines use 22 cars and about 90 mules, and employ about 40 men. The fare is 5 cents. An omnibus line has 6 vehicles and about 30 horses, and employs 10 men. The fare is 25 cents per mile.

WATER-WORKS.

The works for the public water-supply are the property of a private corporation, the Dallas Water Supply Company, and were erected at a cost of \$100,000. The water is pumped from springs into a stand-pipe, and thence

distributed through a part of the city. About 1,500,000 gallons are pumped daily, the largest amount pumped in any one day being 2,200,000 gallons, the least, 1,000,000 gallons. No estimate of the expenses or income of the company could be obtained.

GAS.

The Dallas City Gas Light Company, a private corporation, supplies the city with gas. The charge per 1,000 feet is \$3 90. The city pays \$35 a year for each gas street-lamp, of which 150 are in use. The average daily production and the annual income were not stated.

PUBLIC BUILDINGS.

The buildings owned and used by the city are valued at \$40,000, and include a city hall, a market-house, 2 engine-houses, and a city prison. The city hall was built at a cost of \$28,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The total area of the parks and pleasure-grounds connected with Dallas is about 100 acres. There is a park of about 45 acres situated about $1\frac{1}{2}$ mile from the city to the north, which includes a large pond shaded by oak groves. To the east of the city is a large pleasure-ground of about 40 acres; here there is a fine race-track. South of Dallas there is another park containing 14 acres, which is used as a picnic and pleasure-ground. The last of the pleasure-grounds is a small park of about 3 acres, situated northeast of the city. They are controlled partly by the city, partly by private corporations. The original cost of the various grounds is estimated at \$100,000, and probably about \$40,000 has been spent in improvements, while additions are being made constantly.

PLACES OF AMUSEMENT.

Thompson's theater, seating capacity 500, and Craddock's theater, seating capacity 600, are the only theaters in Dallas. Theaters pay a license of \$250 per annum, or \$2 50 for each performance. The following halls are used as concert- and lecture-rooms: Turner's, seating 400; Loeb's, 250; Forshin's, 150; and Gruetly hall, 150. The city has the following concert- and beer-gardens: Apollo hall, built 1876, seating 300; Tivoli hall, built 1874, seating 150; Musterhaus, built 1874, seating 400, a Sunday place of amusement; and Shady View park, built in 1876, including about 2 acres of land, which is used as a picnic-ground.

DRAINAGE.

The natural drainage of Dallas is good, and it is stated that the necessity for sewerage has become imperative only in the business centers. The natural water-ways were first boxed in with plank, and afterward walled with stone, but they are now being gradually taken into brick sewers. No information is given of the extent of sewerage works, but it is stated that only a small amount of work has been done. The outflow of sewers is carried to the river, 1 mile below the city. During the summer months sewers are flushed every two days. Some cleaning is done by hand, but no data are given of the extent or cost of this work. The city pays one-third of the cost of building sewers, the remaining two-thirds is assessed upon abutting property on the basis of frontage. A brick sewer built in 1880, egg-shaped, 5 feet 10 inches by 3 feet 6 inches, cost \$6 per foot; a 12-inch pipe sewer, \$1 50 per foot.

CEMETERIES; MARKETS.

No information was furnished on these subjects.

SANITARY AUTHORITY—BOARD OF HEALTH.

A board of health for Dallas was organized during the present year. It consists of the health officer, 3 physicians, and 4 citizens, all appointed by the city council, and is a simple advisory board without any authority apart from the council. Up to the present time it has incurred no expense, and has exerted only a little of its slight authority. Its powers are alike in the absence of and during an epidemic. It has no stated meetings—in fact has not met for some months. The chief executive officer is the health officer, who has charge of the maintenance of the public health. His duties are quite extensive, and he has authority to order nuisances abated, and to complain to the mayor if his orders are disregarded. Thorough inspections of the city are made but once a year. Nuisances are generally inspected only when reported, and the health ordinances are only poorly enforced. When a nuisance is found to exist, the owner of the premises is requested to remove or abate it, and if he refuses he is brought before the mayor and tried. There is no custom in regard to the inspection and correction of defective house-drainage, privy-vaults, cesspools, and sources of drinking-water. The city engineer has charge of sewers and streets, and does what he can to remedy defects in the former and inefficient cleansing of the latter. The board has no control over the conservation and removal of garbage. The health officer is given power to make such regulations regarding the burial of the dead as he may think best, but as yet no health officer has exercised this authority.

INFECTIOUS DISEASES.

Small-pox has not visited Dallas for years, and scarlet fever has so far been unknown, so no action has ever been taken in regard to the treatment of those suffering from these diseases. The board has assumed no control over the schools on the appearance of contagious diseases among the pupils—indeed during the present winter measles have been epidemic, and the children, as the health officer states, “were permitted to take it *ad libitum*”. There is no pest-house. Vaccination is not compulsory, nor is it done at the public expense.

The city council can establish a quarantine at any time it thinks such action necessary. There is no system of registration of births, diseases, and deaths.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned by the city’s force, under the superintendence of the city engineer, and entirely by hand. The streets in the business portion are cleaned daily, accumulations of filth being removed, while in the residence portion this work is done once a week. The same force collects garbage from the houses of those who wish it. The total annual cost is about \$8,000. The sweepings are deposited on land owned by the city, and 2 miles beyond the corporate limits.

Removal of garbage and ashes.—Garbage is removed both by the city and by the householders. In cases where the latter choose to collect their garbage and place it convenient for removal by the city’s cart, the city will make the removal. The ordinances require garbage to be kept in covered boxes or barrels, but do not demand that it be kept separate from ashes. The matter collected is dumped outside the city limits. No particular attention is paid to the removal of ashes. The city engineer reports, as the chief defect of the system, that the householders do not exercise sufficient care in collecting their garbage and placing it ready for removal.

Dead animals.—The owner of any animal dying within the city must remove the carcass to the city dumping-ground and there bury it. About 100 horses and 1,500 smaller animals are disposed of in this way every year.

Liquid household wastes.—There is no established system for the disposal of liquid household wastes. In the present unfinished state of the sewers no wastes are allowed to enter them; accordingly most is run into cesspools, but some pass into the street-gutters in spite of the city ordinances, which forbid such a disposition of the wastes. The cesspools are in some cases porous, in some water-tight, and generally receive the wastes of water-closets where these are used. The street-gutters are flushed every day during the summer months. Many wells in the business portion of the city have been abandoned, owing to the contamination of the water by the overflow or soakage from cesspools. The cesspools are cleansed at night by licensed scavengers.

Human excreta.—Much the larger portion of the houses depend on privy-vaults, only a few on water-closets. About one-third of the privy-vaults are nominally water-tight. By an ordinance passed late in the present year, the dry-earth system of privies has been introduced, and persons using privy-vaults in the past are directed to discontinue them within six months, and, if they exceed 4 feet in depth, to discontinue their use immediately. The night-soil is disposed of by carting it to the city dumping-ground. The further disposal of it is not stated by the city authorities. None is used as manure on lands within the gathering-ground of the public water-supply.

Manufacturing wastes.—No system for the disposal of manufacturing wastes has been elaborated, as none has been needed.

POLICE.

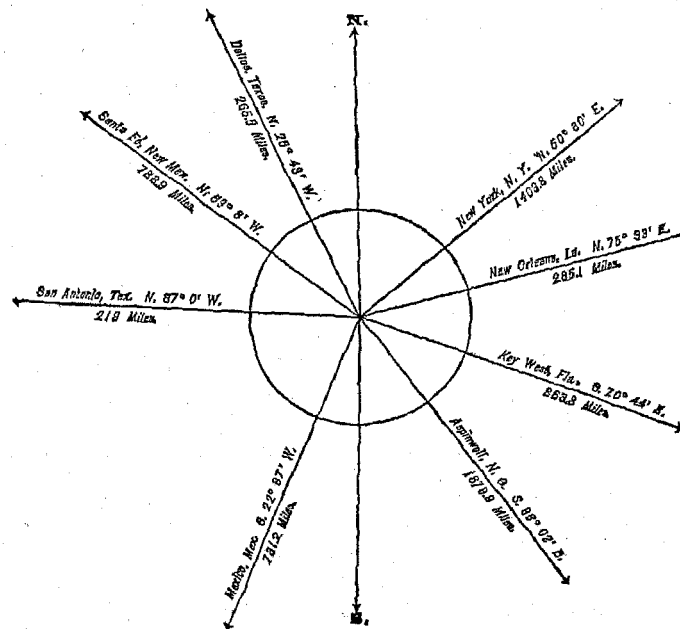
The police force of Dallas is appointed and governed by the board of police, which consists of the mayor, and 2 aldermen chosen by the city council. The chief executive officer is the city marshal, who has the general supervision and charge of the department. His salary is \$100 per month. The rest of the force consists of a deputy marshal, salary \$75 per month; 2 mounted policemen, salary \$65 per month each; and 10 patrolmen, salary \$55 per month each. The uniform is of navy-blue cloth, and costs \$26 50, each man furnishing his own. The men are armed with Colt’s revolvers and clubs. They are on duty 12 hours each day, and patrol all the city’s territory. The principal causes of arrest are drunkenness, vagrancy, and fighting. No records of arrests or of any recoveries of property could be obtained. Special policemen may be appointed by the board of police whenever it thinks necessary, and are, while on duty, subject to the orders of the city marshal.

GALVESTON, GALVESTON COUNTY, TEXAS.

POPULATION

IN THE
AGGREGATE,
1850-1880.

	Inhab.
1790.....	.....
1800.....	.....
1810.....	.....
1820.....	.....
1830.....	.....
1840.....	.....
1850.....	4,177
1860.....	7,307
1870.....	13,818
1880.....	22,248



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	11,036
Female	11,152
<hr/>	
Native	17,202
Foreign-born	5,046
<hr/>	
White	16,834
Colored	*5,364
<hr/>	
*Including 15 Chinese and 1 Indian.	

Latitude : 29° 17' North ; Longitude : 94° 50' (west from Greenwich) ; Altitude : 3 to 9.5 feet.

FINANCIAL CONDITION:

Total Valuation : \$14,904,856 ; per capita : \$670 00. Net Indebtedness : \$1,023,249 ; per capita : \$45 99. Tax per \$100 : \$2 70.

HISTORICAL SKETCH.

Galveston island was first known to the Spanish about the year 1526. But the illiberal policy of Spain toward her colonies prevented the establishment of settlements upon many of the advantageous spots on the Texan coast, and the island remained uninhabited, except by roving bands of Indians, for almost three centuries. In 1816 Don Manuel Herrera was sent by the Mexican patriot congress to the United States as a commissioner to represent the interests of the Mexicans, who were then trying to throw off the yoke of Spain. Herrera endeavored to secure the

co-operation of the independent cruisers of the Gulf, and became in this manner apprised of the great advantages of the island as a base of operations against Spain; he accordingly decided to make it his rendezvous for this purpose, having especially an eye to the rich commerce of the mother country. Herrera secured the co-operation of Don Luis Aury, a distinguished naval commander then in command of the fleets of the republics of Venezuela, La Plata, and New Granada, all armed enemies of Spain and engaged in preying upon her commerce. Herrera had blank commissions to issue to those who would take the oath of allegiance to the patriot government of Mexico.

On the 1st of September, 1816, Herrera and Aury, with a squadron of 12 or 15 vessels and 300 or 400 men, sailed for Galveston island. On the 12th a meeting was held, in accordance with previous arrangement, and a government was organized. Aury was appointed by Herrera civil and military governor of Texas and Galveston island, and took the oath of fidelity to the republic of Mexico; the national flag was raised, and Galveston island was declared a part of the Mexican republic. This island had received its name some years previously, being called after Don José Galvez, who, when Spain declared war against England in 1779—he being then governor of Louisiana—engaged in active hostilities and received a few recruits from Texas. After the close of the war, in 1783, Galvez continued to figure prominently in the negotiations between Spain and the United States relating to the navigation of the Mississippi.

Aury's fleet at once began operations against the commerce of Spain; and so active and daring was it, that in a short time the Gulf was swept clean of Spanish merchantmen. Toward the end of the year (1816) the land force was increased to about 700 men by the arrival of 300 men under the immediate command of General Xavier Mina and Colonel Perry. The many valuable prizes captured by the fleet supported the government handsomely. Numbers of slaves were often captured with the prizes, sold to speculators, and resold to the planters of Louisiana. While affairs were in this prosperous condition, Commodore Aury learned that the town of Soto La Marino, situated on the Santander river, about 60 miles from its mouth, was in a defenseless state. Whereupon, taking his entire land and naval force, he sailed from Galveston island and captured the place without opposition. In the mean time dissensions had arisen between the three commanders. Colonel Perry "disdained" the authority of Aury, and placed himself under command of Mina. Aury realized that without harmony of action the expedition would be a failure, and, after landing his recalcitrant leaders, returned to the coast of Texas about May 10, 1817, and proceeded to explore Matagorda bay, with the ostensible purpose, if this afforded equal facilities to his fleet for offense and defense against the Spanish, of removing his seat of government here and fixing it at some point on the mainland. After spending some days in his investigation of the harbor, etc., Aury set sail for Galveston, and, upon arriving there, was surprised to find the renowned buccaneer, Jean Lafitte, in possession of the island. In vain did Commodore Aury protest against this usurpation; Lafitte paid no attention to him, but proceeded to organize a government, somewhat similar to that of Aury's, to rebuild the houses and cabins he had destroyed, and generally to settle himself upon the island. At the close of 1817 Lafitte's followers numbered more than 1,000 men. Probably a more motley assembly was never before seen; there were representatives of all nations and all conditions; refugees from justice and from injustice; adventurers of all classes, and what not, who, hearing of the highly romantic and prosperous state of things under Lafitte's sway, had been glad to join his service.

Meanwhile, to exonerate himself and to define his position, Commodore Aury, in a letter dated July 21, 1817, addressed to Commissioner Herrera, had denounced Lafitte and his men as pirates, informing him that for the present he had determined to abandon Galveston island; that he had taken the collector, Rouselin, with him, and that all proceedings there after the 31st of July would be without his consent. On the 28th of the same month he addressed a similar letter to the collector of the port of New Orleans. Within five days after Aury's departure the redoubtable Lafitte had taken complete possession of the island, and thus and then began a *régime*, supported by the shadowy authority of letters of marque from the Mexican republican government, of romantic, daring exploits against the Spanish commerce of the Gulf, which lasted five years and inflicted a blow upon the trade of Spain from which it never recovered.

Complaints of Lafitte's despoliations were frequently made to the United States authorities at Washington, and the government would have taken vigorous measures to break up his nest but for the interposition of the Spanish minister, whose government feared that if the United States should disperse the buccaneers from their haunt, it would afterward hold the same for its own possession; so the business of the buccaneers prospered. Soon after the departure of Aury, Lafitte located a town on the ruins of his predecessor's village, built himself a house at the foot of Fifteenth street, and threw up a fort around it, upon which he mounted guns commanding the entrance of the harbor. Other houses were erected, and soon the title "Campeachy" was borne by a busy village of from 1,500 to 2,000 inhabitants. Such of Lafitte's adherents as had wives or mistresses brought them here, and thus the society of Campeachy, without being any way strained as to its *morale*, soon possessed all the elements of permanency. New Orleans furnished a lucrative market for that which their efforts produced, and these farmers of the sea reaped no bad crop. Gambling-houses and sporting establishments flourished. Among other conveniences were an arsenal and a dock-yard for the overhauling and repairing of their vessels.

In 1819 Lafitte took the oath of allegiance to the Mexican republican government and received the appointment of governor of Galveston. He soon after became involved in trouble with the United States through the reckless conduct of one of his leaders—a Captain Brown—a ferocious character who knew no law but that of might; and in

1820, depredations were again committed by Lafitte's cruisers against American commerce, which finally decided the powers at Washington to break up the buccaneer's rendezvous. Early in 1821 the brig "Enterprise" sailed for Galveston with this end in view. Notification was given that the island was to be abandoned, and sufficient time was given the buccaneers to remove such property as they desired. General Long (mentioned later), who was encamped at Bolivar point, urged Lafitte not to destroy the buildings which had been erected, as he intended now to change his base of operations from the point to the island. But Lafitte was inexorable in his purpose to remove the last vestige of habitation from the island. However, he informed General Long that what buildings he could remove before his departure he might have, but what then remained would be committed to the flames. After settling with his adherents and supplying them with money and abundant supplies, the chief of the buccaneers issued orders for their dispersion, and, when their last sail was hull down, ordered the torch applied to what was left of his town of Campeachy; "and, when the last vestige of a habitat had succumbed to the flames, he piped all hands aboard of his own favorite vessel, the 'Pride', and stood out to sea, a wanderer on its broad bosom."

General Long, who had conceived a plan of establishing an empire west of the Sabine, occupied Galveston and Bolivar peninsula for a few months, as a rendezvous for his daring followers; then, after having been the home of the last and greatest of the buccaneers of the Gulf for about five years, Galveston island again became a lonely, desolate waste, whose solitude was broken only by occasional parties organized to search for supposed treasures left buried by Lafitte.

The peculiar advantages of Galveston had been observed by Stephen F. Austin, who was convinced that it would early become the commercial metropolis of the Southwest. In pursuance of a colonization scheme of his own he applied, in 1824, to the Mexican government for a grant to him of the island, with authority to lay out and establish a town on its eastern extremity; but his application was refused. A similar attempt was also made by others, but it was not until the Texan republic was established that a title was received and perfected to "a league and labor" of the coveted land, by Colonel Juan N. Seguin. This "league and labor", embraced in the site of the city, was conveyed by a decree of Veramendis, governor of Coahuila and Texas, dated Monclova, April 27, 1833, "with order to whomsoever it might concern to put him (Seguin) in possession". Colonel Michael B. Menard, attorney for Colonel Seguin, purchased the head right, and, after the republic of Texas was established, applied to the first congress for a quitclaim deed to perfect the title, under the new dispensation, to the "league and labor" secured through Seguin. Congress granted the application on condition of \$50,000 being paid to the republic. Menard complied with this condition, formed a company in 1837, and laid out the town of Galveston in 1838, the first sale of lots taking place at public outcry on April 20. During the year, 700 lots were sold, at an average price of \$400 each, \$3,100 being paid for the first one.

The "Columbia", the pioneer of the Morgan line, was the first steamship to enter the harbor of Galveston, from New Orleans, in 1837. The first issue of the first newspaper, the *Commercial Intelligencer*, appeared in July, 1838. It was short-lived, and was followed by the *Civilian* in October following. The first hotel and the first wharf were erected in 1838, and the first election to the republican congress was held in August of the same year. Religious worship was first held in a building at the corner of Twenty-first and Market streets, and resulted in a church organization and the erection of a house, which afterward became the property of the Presbyterians, the first distinct religious body formed in the place. The collector of the port was Gail Borden, who had his office and the custom-house in the old brig "Perseverance", stranded during a storm in the fall of 1837. The city received its charter in the spring of 1839, organizing a city government with John M. Allen as mayor. In the following fall Galveston county was organized. The *Galvestonian* and *Times* newspapers were begun. The first exportation to Liverpool direct was made in the latter part of 1839, and in the next year an English ship brought over a small hydraulic press to compress cotton for exportation. The population at the close of 1839 was fully 1,200, and it rapidly increased. Some of the merchants of Quintana, Velasco, and other rival towns along the coast, recognizing Galveston's superior advantages, removed hither and largely assisted the increasing ascendancy of the place, which quickly grew into commercial importance, until the merchantmen of nearly all maritime nations entered and cleared from the port. When Texas was annexed to the United States in 1845, Galveston was in a highly prosperous condition. After annexation foreign shipping ceased, in a measure, to come here, the commerce of the port being monopolized by American vessels, and the growth of the city became slower. But commercial relations, however, were fully established with foreign ports in 1857, '58, '59, '60. Regular lines of packets to foreign and domestic ports were established; large cotton-compresses were put up; many manufacturing enterprises were started; and, in 1860, the future had an especially bright forecast.

Then came the civil war, and brought Galveston to the verge of ruin. Out of a population of 7,307 in 1860, there were left in 1865 but 3,500 souls. "With their beautifully embowered homes dilapidated and in ruins, broken in fortune, their trade gone, her citizens did not lose faith," but began at once to retrieve their fortunes. Galveston received considerable aid in her work of recuperation from her share of the emigration to the South which followed the close of the war. As Texas had suffered less than any other southern state, so her recovery was more rapid. In five years Galveston had regained her lost population, together with an increase of 6,511. For the next five years her growth was marvelous, in both population and wealth, and her commercial and maritime progress has been no less remarkable. Prior to the war, Galveston made no pretensions as a cotton market; but since

the war she has become the third cotton and the fourth coffee market of the United States. While cotton has been and still is the staple of Galveston's exports, other articles are coming, for this purpose, into importance—such as wool, hides, cottonseed oil, and oil-cake. The manufactures of Galveston are already quite extensive. Outside of the cotton business are, a foundry and machine-shop, a sash-and-blind factory, an ice manufactory, 2 large flouring-mills, an oil factory, a street-car manufactory, and numerous smaller establishments.

GALVESTON IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Galveston:

LOCATION.

Galveston lies in latitude 29° 17' north, longitude 94° 50' west from Greenwich, on an island of the same name, lying just off and parallel with the eastern coast of Texas, with the gulf of Mexico on the south and the bay of Galveston on the north. The island is about 25 miles long and from 1½ to 2½ miles wide. The city occupies the northeast portion of it. Navigable water surrounds it on all sides. The harbor is well protected on the north side of the island, and consists of a channel about 8 miles long and from 200 to 5,000 feet wide. The channel has an average depth of 20 feet, and on the bar, at the entrance, of 14 feet. There is wharfage for about 100 large vessels and a large number of small craft. Water communication is maintained with all Gulf and Atlantic ports, and inland on the Trinity river with Houston and points up for about 400 miles.

RAILROAD COMMUNICATIONS.

The city is touched by the following railroads: Galveston, Houston, and Henderson railroad, connecting at Houston with six lines centering at that place; and the Gulf, Colorado, and Santa Fé railroad, connecting at Rosenberg's Junction with the San Antonio railroad.

TRIBUTARY COUNTRY.

The peculiar situation of Galveston gives it but little variety in the character of the adjacent country, and only a very limited local trade with the sparsely settled island and a few small places along the bay.

TOPOGRAPHY, ETC.

The island upon which the city is situated is low and almost level. The soil is fine sand, underlaid by quicksand, beneath which, at a depth of from 50 to 100 feet below the surface, is clay. The drainage is good, as the island is highest in the middle, and the slopes each way, though not great, are sufficient for the carrying off of water. Excepting a few small salt marshes west of the city, and a few salt-water bayous of small area, there are neither marshes nor ponds in the vicinity. Within 5 miles of the city the country is formed only of sandy prairies, with small farms.

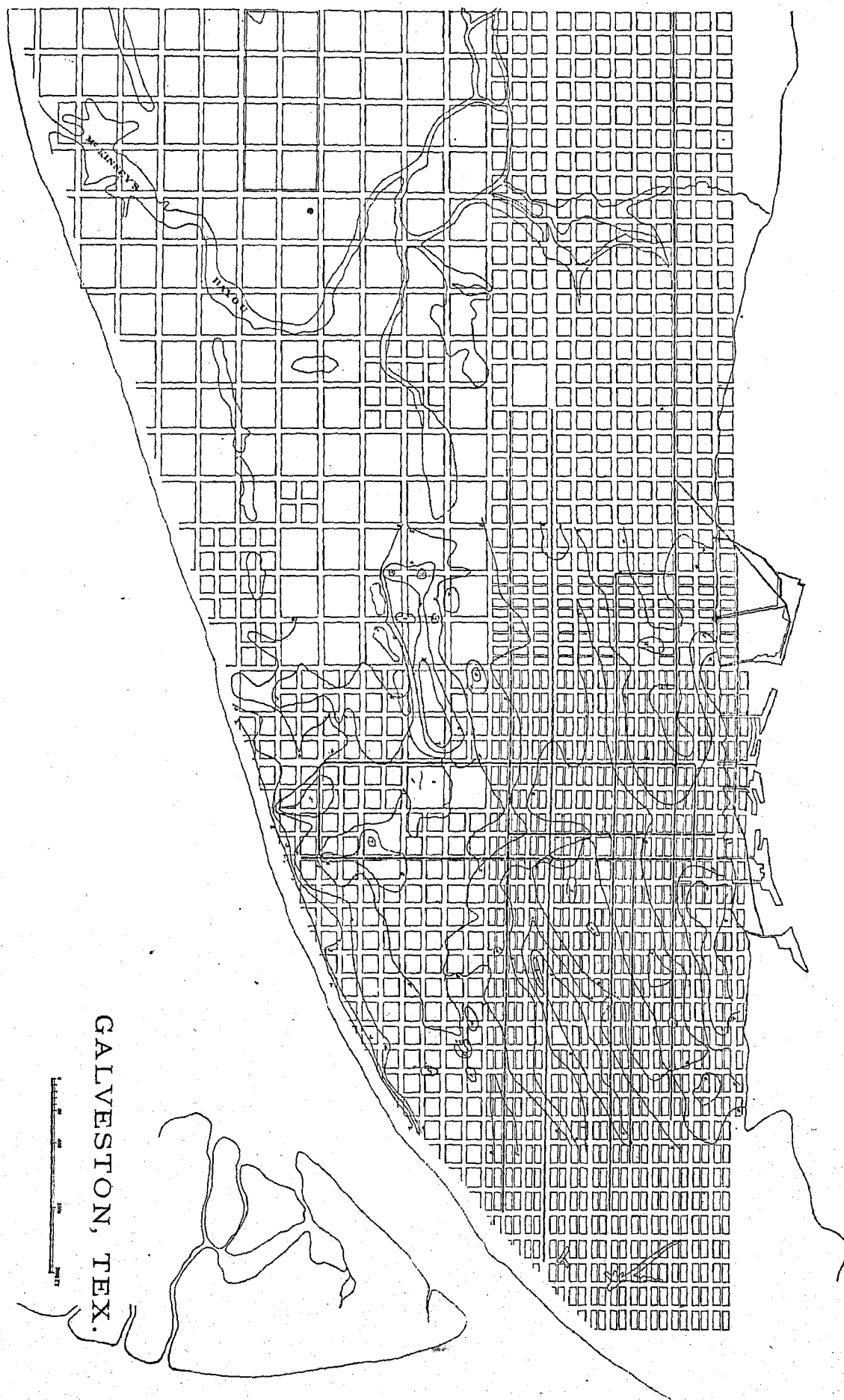
CLIMATE.

Highest recorded summer temperature, 98½°; highest summer temperature in average years, 95°. Lowest recorded winter temperature, 21°; lowest winter temperature in average years, 28°. The waters of the bay and Gulf, to the influence of which the city is peculiarly open, tend at all seasons to equalize the temperature. Even the "norther" (wind) does not blow so cold here as at points inland to the west. The slight marshes to the west of the city are not thought to exert any climatic influences. The prevailing winds are from the southeast and south, and this latter wind (from the Gulf) is the main cause of Galveston's mild and delightful climate, which, as the maximum figures show, is less warm in summer than that of many other cities of the United States.

STREETS. (a)

The city has 200 miles of streets, of which 100 miles are paved with broken stone and 1½ mile with wood, which latter costs, per square yard, from \$3 to \$4, and for yearly repairs about 1 per cent. on the cost. It is also considered here the best kind of pavement for quality and permanent economy. The sidewalks are laid with wood, asphalt, tile, and cement, while the gutters are paved with wood. Trees are planted 2 feet inside the curb on most of the streets. Avenue J has, besides the usual sidewalks, an esplanade 20 feet wide in the center, with trees on each side. The paving of streets is done by contract, but the repairing is done by the city. Under good supervision, contract work is preferred. There are two horse-railroads in the city, but no statistics regarding them were furnished.

^a It is to be regretted that so little information on this subject was furnished by the city authorities.



GALVESTON, TEX.



WATER-WORKS.

No information as to the water-supply of Galveston was given.

GAS.

The gas-works are owned by private persons. The charge per 1,000 feet of gas was not stated. There are 179 street-lamps, and the city pays annually nearly \$11,000 for lighting.

PUBLIC BUILDINGS.

The city owns and occupies for municipal purposes, wholly or in part, 1 city hall, 2 market-houses, 1 hospital, and 4 engine-houses. Their total cost was not given.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The total area of these is 15 acres, and they consist of blocks of about 2 acres each, situated in various parts of the city. Outside of the city limits is a park called the "Winter Palace", but no information regarding it was furnished. The parks are controlled by a committee of 3 aldermen, called the "committee on public squares and esplanades".

PLACES OF AMUSEMENT.

Galveston has 2 theaters: Tremont opera-house, with a seating capacity of 1,200, and the New London Novelty theater, seating capacity 700. These theaters pay an annual license each of \$250 to the city. In addition there are Artillery hall, Turner hall, and Casino hall—the last two being provided with stage and scenery—used for concerts, etc. There are no beer-gardens, properly so called, in the city.

DRAINAGE.

Galveston has no system of sewerage.

CEMETERIES.

There are 5 cemeteries in the city—1 public and 4 private—and all adjoining. Combined, these cemeteries occupy 6 blocks of 300 by 260 feet each, and the streets between, 80 feet in width. The city cemetery occupies 2 blocks and the others 1 block each. Their location is about 2 miles west of the center of the city, on both sides of Avenue K, between Fortieth and Forty-third streets. A part of the City cemetery, which was used for the interment of yellow-fever victims during the epidemic of 1867, is no longer used, and is known as the "Yellow-fever cemetery". The total number of interments in all of the burial-grounds from 1866 to 1880, including the epidemic years of 1867, 1870, and 1880, is 9,167. The limit of time between death and burial is 24 hours. Graves are dug only 3 feet deep, on account of the underlying quicksand. The Catholic and Episcopal cemeteries each employ a sexton, who has charge of the grounds. The other cemeteries are all under the control of a sexton who is elected by the city council. Lots are sold in all the cemeteries, though a part of the City cemetery is set aside for the burial of paupers. The usual charge for a single grave is \$5. A full-sized lot, 16 feet square, is sold for \$40. The following statement is made in this connection by the city clerk: "There is no revenue from the cemetery to the city any more, as almost all the lots belonging to the city are (already) sold, and only private cemeteries are being used now for burying."

MARKETS.

Galveston has two public markets. The main market consists of 2 buildings, situated in the center of the business portion of the city, one building being devoted to the sale of meat and the other to the sale of fish and vegetables. The former contains 44 and the latter 24 stalls—8 for fish and 16 for vegetables. These 2 buildings cover an area 390 feet in length by 43 feet in width, and are little more than long roofs resting on brick columns. The spaces between the columns are closed by "blinds". The stalls are situated along the sides, with a space of 18 feet between, and are 10 by 10 feet in area. The floor is made of cement, which is cleaned with scrapers and streams of water from a force-pump. Behind the vegetable market is an open space of 130 by 43 feet, for wagons to stand. The other, and smaller, market is situated in the 1st ward, and contains but 8 stalls. The public markets are open from 3 to 9 a. m. in summer and from 4 to 10 a. m. in winter, sales being held every morning. It is estimated that from one-half to three-fifths of the retail supply of meats, poultry, fish, and vegetables is sold in the public markets, as compared with two-fifths to one-half sold by private stores and stands. In the main market the city receives for such meat stalls as are used an annual rental of \$75 each, and for fish and vegetable stalls \$50 each per annum; for the First Ward market, \$50 per annum for each stall rented; and for each of the 31 private stores or stands of the city, \$50 per annum; making a total yearly rental of \$6,300, divided as follows: Main market, \$4,500; First Ward market, \$150; and the stores, \$1,650. Concerning the wholesale distribution of the foods mentioned above, the city clerk says: "There is hardly any wholesale trade in meat; every butcher buys

direct from the stock-yards, and sells his meat either in his own or the public markets. The wholesale trade in vegetables is also insignificant; most gardeners have their vegetable stands in the market, or sell their vegetables to peddlers, who peddle from wagons and from house to house.*

SANITARY AUTHORITY—BOARD OF HEALTH.

The Galveston board of health is the chief sanitary organization of the municipality. The board consists of 9 members, 3 of whom are physicians, appointed by the mayor and confirmed by the city council. Owing to the large amount of work undertaken by the board, its annual expenses in ordinary times appear large. The city allows the board the use of certain drays and men, for sanitary street-cleaning, etc., and charges it with the amount so expended (\$6,527 87 in 1880), although this sum is deducted from the street appropriation. The expenses of the board, at all times, are regulated by the appropriations made by the city council. In the absence of epidemics the board has, in addition to its control over the cleaning of streets, supervision over yards, privies, etc., and can compel the cleansing of the same at its discretion. During epidemics the board, by charter, has power to isolate cases of contagious diseases, and to use all necessary means to prevent the spread of an epidemic, with absolute power of quarantine. The board has a chief executive officer in the person of its secretary, who is also the health officer, and in this capacity draws a salary of \$1,500 per annum. Ordinarily one inspector is employed. He is a police officer detailed for the purpose; and, in case of necessity, other policemen are detailed for this duty by the city council. Their police powers, during their service as inspectors, remain full and complete. The board holds regular meetings twice a month, at which business is transacted in the usual manner. Inspections are made regularly by the inspector, and also when nuisances are reported. When nuisances are found to exist they are ordered to be abated, and if this is neglected the responsible parties are fined. The scope of the inspector's work includes the noting for correction of defective house-drainage, privy-vaults, cesspools, and street-cleaning. Fortunately drinking-water needs no supervision, as cisterns, either above ground or else tightly cemented, are relied upon. The board has control over the conservation and removal of garbage. Deceased persons may be interred only in regular cemeteries, and then only upon the presentation to the sexton of a certificate signed by the attending physician, or, in the absence of a physician, by two citizens, setting forth the cause of death, age, and other particulars concerning the deceased. Privies are emptied and excrement is removed by scavengers, who receive a permit to engage in the business from the city physician.

INFECTIOUS DISEASES.

Small-pox patients are isolated either at their homes or by being sent to the quarantine station at the extreme eastern end of the island. Scarlet-fever patients (of which disease there is very little here) are quarantined at home. Vaccination is neither compulsory nor is it done at the public expense.

REGISTRATION AND REPORTS.

Although provided for in the city charter, there exists no system of the registration of births and diseases. Interments are returned by the city sexton to the health officer. The board of health reports annually to the city council, but its reports are not published.

MUNICIPAL CLEANSING.

Street-cleaning.—The city's force cleans the streets by hand. A gang of men is kept constantly at work, so that the principal streets are cleaned about 3 times a week, and the work is said to be well done. Its annual cost to the city is about \$4,500, but whether or not this sum is included in the amount expended by the board of health for the same purpose is not stated. Unobjectionable portions of the sweepings are used in the city for filling, while the rest is buried on the beach or bay shore.

Removal of garbage and ashes.—Most of the garbage is removed by the city; a small portion is removed by butchers, in licensed carts, outside the city limits. What the city removes is taken by its own force two or three times a week. The garbage while awaiting removal must be kept in tight vessels, but there is no law requiring it to be kept separate from the ashes. Such garbage as is taken by the city is buried remotely. Ashes are not removed from premises, but are used there for filling low places, for fertilizing purposes, etc. The cost of the service is included in that given for street-cleaning.

Dead animals.—If the owners of dead animals can be found, they are required to remove them; otherwise the city is forced to do it, taking the carcasses beyond the corporate limits. The cost of this work is also included in the street-cleaning.

Liquid household wastes.—Offensive wastes, such as chamber-slops, etc., are thrown into cesspools, while laundry wastes are allowed to run into the gutters of alleys, but not of streets. As Galveston is without water-works, the gutters can not be artificially flushed. About 90 per cent. of the cesspools are porous, the rest are nominally water-tight, while none have overflows. When the inspector reports to the health officer that a privy or cesspool needs cleaning, the latter orders this done by a licensed scavenger.

Human excreta.—Less than 5 per cent. of the houses of the city have water-closets, and these deliver into cesspools. Of privy-vaults, not more than 10 per cent. are water-tight. Since 1877 all privy-vaults are required by law to be made of brick or stone, with the sides and bottom cemented, and the edges rising above the level of the ground; but the statement is made that, though they are so constructed, they are apt soon to fall into decay and become no longer tight. The dry-earth system is not in use to any extent. The night-soil is dumped into the bay, at either the eastern or the western extremities of the city.

Manufacturing wastes.—Galveston has no manufactories of such nature as to require the regulations by law of the disposal of their wastes, either liquid or solid.

POLICE.

The police force is appointed and governed by the chief of police, subject to the approval of the mayor and the city council. The duties and powers of the chief of police are rather larger than ordinarily attach to this office, and include attendance at the recorder's court and the execution of its warrants and processes; the general supervision of the discipline of the force, including the investigation into charges against policemen; the promulgation of orders to the police, and the keeping of numerous books and records relating to the business of the department. His salary is \$1,700 per annum. The rest of the force is as follows: 2 sergeants and 1 clerk at \$1,080 each per annum; and 35 patrolmen at \$900 each per annum. The uniform is of navy-blue, indigo-dyed, all-wool cloth coat and trousers, with brass buttons, and cap, the difference in rank being shown on the cap. The men provide their own uniform, at a cost of \$35. Patrolmen are equipped with clubs, revolvers, nippers, and whistles. They are divided into day and night force, and go on duty at 7 p. m. and 7 a. m., respectively. About 12 miles of streets are regularly patrolled, and occasionally this is extended so as to cover 20 miles.

During the past year there were 2,002 arrests made by the force, the principal causes being, for drunk and disorderly, 305; disorderly, 290; assault and battery, 244; fighting, 182; abusing and insulting, 162; drunk, 117; vagrancy, 110; violating sanitary regulations, 97; theft, 82; assault with intent to murder, 42; carrying concealed weapons, 37; burglary, 8; and miscellaneous, embracing 46 different offenses, 46. Out of these there were 1,280 convictions, while the remainder were discharged. During the same time, property to the estimated value of \$2,400 was reported to the police as either lost or stolen, and of this, \$2,010 worth was recovered and returned to the owners. In the same period it is estimated that 1,000 night-lodgers were accommodated, and free meals valued at from \$250 to \$300 furnished. The police force is required to co-operate with the fire and health departments in a general way, by helping to execute the regulative ordinances. Special policemen are appointed by the mayor or chief of police to attend places of amusement, balls, etc., and also as night-watchmen for private property, at the owner's expense. The yearly cost of the police force (1880) is \$32,766 76.

FIRE DEPARTMENT.

Galveston's fire department consists of a manual force of 1 chief and 3 assistant engineers, and 7 companies, with 6 engineers, 7 drivers, and 1 tillerman. The apparatus consists of 6 steamers, 2 hook-and-ladder trucks, and 6 hose-carriages. There are 19 horses. The cost of the department in 1879 was \$18,430.

COMMERCE AND NAVIGATION.

[From the reports of the Bureau of Statistics for the fiscal years ending June 30.]

Customs district of Galveston, Texas.	1879.	1880.
Total value of imports.....	\$871, 938	\$1, 107, 241
Total value of exports:		
Domestic.....	\$16, 393, 877	\$16, 712, 861
Foreign.....	\$58, 184	\$37, 028
Total number of immigrants.....	18	7

Customs district of Galveston, Texas.	1879.		1880.	
	Number.	Tons.	Number.	Tons.
Vessels in foreign trade:				
Entered.....	215	135, 500	195	117, 974
Cleared.....	203	128, 890	173	99, 007
Vessels in coast trade and fisheries:				
Entered.....	371	384, 326	455	472, 165
Cleared.....	286	250, 603	339	282, 546
Vessels registered, enrolled, and licensed in district..	200	11, 526	184	9, 780
Vessels built during the year.....	8	242	7	87

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Galveston for 1880, being taken from tables prepared for the Tenth Census by Edward J. Byrne, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 16 years.	Children and youths.			
All industries	170	\$871,350	638	15	36	\$400,785	\$1,283,240	\$2,375,005
Blacksmithing	14	32,700	20	.....	2	14,975	18,880	52,525
Boots and shoes, including custom work and repairing	21	6,800	19	.....	.....	14,050	34,875	78,050
Bread and other bakery products	8	15,200	19	.....	.....	13,511	59,300	90,300
Carpentering	8	14,800	33	.....	.....	28,500	48,750	101,000
Confectionery	3	61,500	18	.....	3	15,800	30,000	140,600
Coupage	8	18,300	42	.....	.....	35,850	81,000	147,000
Flouring- and grist-mill products	4	97,000	22	.....	.....	15,200	257,103	313,340
Foundry and machine-shop products	4	76,000	57	.....	.....	32,330	51,500	103,000
Furniture	11	7,450	8	.....	3	5,425	4,225	23,000
Painting and paperhanging	10	24,450	33	.....	.....	20,050	30,300	81,500
Patent medicines and compounds	3	9,000	6	.....	.....	5,250	10,500	35,500
Photographing	4	7,300	4	3	.....	5,100	2,050	20,200
Plumbing and gasfitting	3	21,500	18	.....	2	17,050	24,400	52,000
Printing and publishing	5	287,000	107	6	21	112,503	52,738	200,500
Saddlery and harness	5	19,900	13	.....	.....	9,525	24,000	42,850
Shipbuilding	4	1,300	1	.....	.....	1,430	4,000	6,000
Tinware, copperware, and sheet-iron ware	9	51,000	32	.....	.....	29,000	34,500	150,000
Tobacco, cigars and cigarettes	13	15,700	56	.....	.....	43,950	53,200	178,350
All other industries (a)	28	104,450	120	6	5	71,000	348,800	515,050

a Embracing bags, other than paper; boxes, fancy and paper; carriages and wagons; coffins, burial cases, and undertakers' goods; clothing, men's; drain and sewer pipe; hand-stamps; hats and caps, not including wool hats; looking-glass and picture frames; marble and stone work; mattresses and spring beds; mineral and soda waters; musical instruments, pianos and materials; perfumery and cosmetics; pickles, preserves, and sauces; safes, doors, and vaults, fire-proof; ash, doors, and blinds; shirts; show-cases; stencils and brands; and umbrellas and canes.

From the foregoing table it appears that the average capital of all establishments is \$5,125 59; that the average wages of all hands employed is \$730 68 per annum; and that the average outlay, in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$10,795 95.

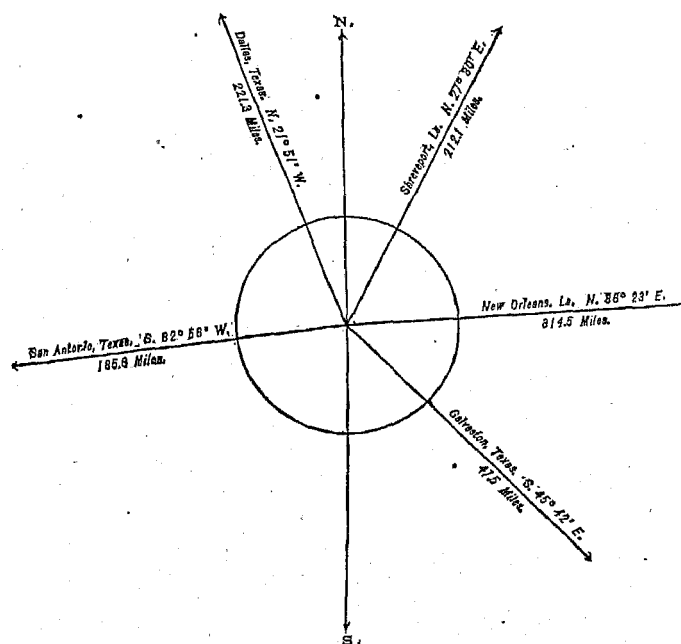
HOUSTON,

HARRIS COUNTY, TEXAS.

POPULATION

IN THE
AGGREGATE,
1850-1880.

	Inhab.
1790	
1800	
1810	
1820	
1830	
1840	
1850	2,396
1860	4,845
1870	9,382
1880	16,513



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	8,029
Female	8,484
<hr/>	
Native	14,240
Foreign-born	2,273
<hr/>	
White	10,026
Colored	*6,487
*Including 7 Chinese and 1 Indian.	

Latitude: 29° 47' North; Longitude: 95° 21' (west from Greenwich); Altitude: 35 to 45 feet.

FINANCIAL CONDITION:

Total Valuation: \$5,352,314; per capita: \$324 00. Net Indebtedness: \$1,501,592; per capita: \$90 93. Tax per \$100: \$2 70.

HISTORICAL SKETCH.

The site of the city of Houston was chosen by John K. Allen in the year 1836, not long after the decisive battle of San Jacinto (April 21, 1836) had established the independence of Texas; and its name was given in honor to the man to whom, more than to any other, Texas owed her freedom—General Samuel Houston, the victor of San Jacinto. It was immediately laid out in streets and lots, and in August the "town lots" were offered for sale on the market. The advantages of the site were soon apparent. The city was at the head of navigation, and was an excellent point from which to ship the productions of the central part of the state, which could easily be gathered there, and the founder foresaw that at this point the future railroad system of the state would find its center. It is said that he pointed to one street, to which he had given the name "Railroad street", and predicted that along it would run the great railroad of Texas. His prediction has come true; the street is still called "Railroad street", and through it pass continually the trains of the Houston and Texas Central railroad. In May, 1837, the Texas congress met in

Houston, holding its sessions in a capitol which had been erected by the city at a cost of \$36,000 and presented to the state; but in a few years the new city of Austin was made the capital, and Houston was thus deprived of some of her importance. With the annexation of Texas to the United States the growth of the city became more rapid, capital was attracted to it, and immigrants came in considerable numbers. In 1849 or 1850 the design of a railroad from Harrisburg to Austin was conceived, and the projector, General Sidney Sherman, took active measures to make his plan a success. New England capitalists were induced to take an interest in the road, a charter was obtained from the legislature containing a proviso empowering the city of Houston to tap the road at some convenient point, and the enterprise was pushed with energy. The citizens of Houston thenceforth interested themselves in railroad construction, and obtained charters for three roads to center in their city—the Galveston, Houston and Red River, now the Houston and Texas Central railroad, the Houston Tap and Brazoria, and the Texas and New Orleans. The Texas legislature made liberal grants to the several lines, and by 1861 there were 357 miles of railways centering in Houston. All progress stopped with the outbreak of the civil war. Houston was just entering upon a period of great prosperity and of rapid advance, but was now suddenly checked in her career. Although trade seemed active during the war, it was carried on upon too precarious a foundation to be a permanent advantage to the city. The citizens of Galveston, alarmed by the blockade, took refuge in Houston, and entered heartily into the work of advancing the interests of their asylum, but little real progress was made until the close of the war. With the advent of peace Houston began rapidly to advance toward the goal which the war had moved five years into the future, and is now an important railroad center of Texas, and a city of 16,513 inhabitants, surpassed in numbers only by Galveston and San Antonio, while in trade it is fully the equal of any in the state. The shipments of cotton during the past year amounted to 459,697 bales; while during the same period the receipts of hides were over 2,000,000 pounds; of wool, 250,000 pounds; of sugar, 8,000 hogsheads; of molasses, 18,600 barrels; and of sirup, 24,000 barrels. The first fire company was organized in 1836 or 1837, and from this beginning has grown an excellent department. The city has never been swept by any one great fire, yet her losses from this cause at various times have been large, and since 1874, when the fire department was organized and a record of losses began, amount to more than \$2,000,000.

Gas was introduced in 1866-'67, and water within a few years. The city has 22 churches and 23 public and private schools, while her secret, literary, and social societies are very numerous. There are 4 banks and 2 private banking-houses, and 3 daily and 4 weekly newspapers.

HOUSTON IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Houston:

LOCATION.

Houston is situated in latitude 29° 47' north, longitude 95° 21' west from Greenwich, on both sides of the Buffalo bayou, about 45 miles from the gulf of Mexico, and 50 from the city of Galveston. The lowest point is 35 feet, the highest 45 feet above the sea-level, the average altitude of the city being about 40 feet above the level of the gulf of Mexico. The Buffalo bayou empties into Galveston bay, and is navigable as far as Houston, although vessels drawing 12 feet of water are compelled to stop 3 miles below the city. The tide comes up as far as Houston.

RAILROAD COMMUNICATIONS.

The following railroads center in Houston, and connect it with their terminal points:

The Houston and Texas Central, termini Houston and Sherman.

The International and Great Northern, termini San Antonio and Longview.

The Galveston, Harrisburg, and San Antonio, termini Houston and San Antonio.

The Galveston, Houston, and Henderson, termini Galveston and Houston.

The Texas and New Orleans, termini Houston and Orange.

The Houston, East and West Texas (narrow gauge), termini Houston and Goodrich.

The Texas Western Narrow Gauge, termini Houston and Pattison.

The Gulf, Colorado, and Santa Fé, termini Galveston and Cameron; this road does not enter Houston on its own tracks.

The Texas Transportation Company, termini Houston and Clinton.

TRIBUTARY COUNTRY.

The surrounding country is almost exclusively devoted to agriculture, cotton, sugar, and vegetables being the leading products.

TOPOGRAPHY.

The site of Houston is of recent geological formation, belonging to the Tertiary (Miocene) period, and borings have never been made of sufficient depth to ascertain what is the underlying rock. The city is on a level plain, extending for miles, and free of trees except along the river-banks, which are well wooded. The natural drainage is not good. The soil is generally alluvial, in some places quite sandy. There are a few marshes within a radius of 5 miles, but no ponds or lakes.

CLIMATE.

The highest summer temperature is about 102°, but in average years the temperature does not exceed 97°; the lowest temperature ever known in winter is 18°, while it is rare for the thermometer in average years to fall below 27°. The climate does not seem to be influenced by adjacent waters or by the marshes.

STREETS.

None of the streets are paved. The question of paving them is now being agitated, and a committee has been appointed to ascertain the relative cost and advantages of the different paving materials. In the main part of the city the sidewalks are of brick or asphalt in almost equal proportions, while in the suburbs plank sidewalks are generally used. There are a few cement sidewalks in the business portion. The street-gutters in the compact portion of the city are of brick laid in cement, with brick curbs topped with cypress wood as a protection; in the more scattered parts there are frequently no gutters at all, and the curbs are sometimes of wood. The custom of the abutters to plant shade-trees along the streets in front of their premises is becoming more common every year. The city does not undertake to regulate the planting, but leaves the matter entirely to individual taste. The work of construction and repairs of streets is done by the day, and at an annual cost of \$20,000, which, however, includes also the expense of cleaning the streets, and of removing the garbage, etc.

HORSE-RAILROADS.

There is a horse-railroad which has a little more than 3 miles of track, owns 16 cars, 2 horses, and from 50 to 55 mules, and employs 37 men. The fare is 5 cents. There are no omnibus lines.

WATER-WORKS.

Beyond the fact that the city is supplied with water by a private company, which has in use about 12 miles of pipes and mains for distributing the water, which it takes from the Buffalo bayou, nothing could be learned in regard to the water-works.

GAS.

The city is supplied with gas by the Houston Gas Light Company, a private corporation. No further information was furnished.

PUBLIC BUILDINGS.

The city owns and uses for its municipal purposes a market-house (in which are also located the city offices and the city hall), a station-house, 11 school-houses, a powder-house, and a pest-house. The last two buildings are situated outside the city. The market-house cost \$100,000, while the other buildings are valued at about \$50,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The Texas State Fair Grounds, area 70 acres, although private property, are open to the public for walking or driving free of expense. The total cost of these grounds was over \$80,000, and \$2,500 is annually expended in maintaining them.

PLACES OF AMUSEMENT.

Gray's opera-house, seating 800, and Pillot's opera-house, seating 700, are used by traveling companies for theatrical performances, but have no regular stock companies attached to them. Theaters pay a license of \$2 50 for each performance, or of \$62 50 per quarter. Lyceum hall, situated in the market-house, is used regularly by the Lyceum association, a literary society, and lectures are occasionally given there. The city has no concert- and beer-gardens.

SEWERAGE AND DRAINAGE; CEMETERIES; MARKETS.

No information on these subjects was furnished.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority is the board of health, consisting of 5 members of the board of aldermen, appointed by the city government, and the health officer. The expenses of the board in ordinary times are only for salaries. Such members as do not receive salaries in other capacities are paid \$5 for each meeting. The board is controlled by the city council, especially in matters of expenditures. Its authority in sanitary matters is absolute; the whole

city is under its supervision, and an inspector is kept constantly employed in investigating and suppressing nuisances. The chief executive officer is the health officer, who receives a salary of \$1,000 per year. The board meets only for the transaction of necessary business, but during the prevalence of an epidemic it comes together once a week, or oftener if summoned by the president. One inspector is employed; he has power to enter premises for sanitary purposes at any hour between 6 a. m. and 6 p. m. Inspections are made regularly in all parts of the city.

NUISANCES.

When nuisances are found to exist they are abated at once. The inspector at all times supervises house-drainage, privy-vaults, and cesspools. The drinking-water of most of the inhabitants is obtained from cisterns, and is therefore not exposed to contamination; accordingly it is rarely inspected. The streets are cleaned by men employed under the supervision of the president of the board and licensed for this purpose. No others are allowed to do this work. No regulations prohibit the pollution of the streams.

GARBAGE.

The board compels all garbage to be kept in tight vessels, and placed convenient for removal by the city scavenger.

BURIAL OF THE DEAD.

A physician's certificate of death must be presented to the graveyard sexton before an interment is allowed. The sextons make weekly reports to the health officer.

INFECTIOUS DISEASES.

Small-pox patients are isolated in a pest-house situated just outside the city limits on a farm of 17 acres closely fenced in. No attention is paid to scarlet fever. If contagious diseases break out in the schools, the board has authority to take any action it thinks advisable. Any one knowing of the existence of any contagious disease must report it to the health officers, under penalty of \$100 fine for neglect. Vaccination is not compulsory, but is done at the public expense for those wishing it.

A record of births, diseases, and deaths is kept by the health officer.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned by a force paid by the city and employed solely for this work, for which a license is issued by the board of health. The cleaning is done under the supervision of the president of the board of health, and as often as is necessary; sometimes as often as once a day, especially in the sickly season. The sweepings are used for filling up low places in the suburbs.

Removal of garbage and ashes.—In the heart of the city garbage is removed by the city scavenger-cart, but in the thickly settled parts it is disposed of by the householders. In the first case the collection is made by the city's force, each householder placing the barrels or zinc-lined boxes containing his garbage on the sidewalks ready for the collector, who makes his rounds between 9 a. m. and 1 p. m. Garbage and ashes may be placed in the same vessel. The garbage is removed beyond the city limits. Ashes are used for filling, and often for disinfecting-purposes, in privies.

Dead animals.—The city requires the owner of any animal dying within the city to remove the carcass beyond the corporate limits.

Liquid household wastes.—Chamber-slops are disposed of in the same way as kitchen and laundry wastes. There are only 5 sewers in the city, and where it is practicable the houses are connected with them; but in general the wastes are thrown into cesspools. These are in all cases porous, the custom being to dig down to quicksand and thus provide a means for the liquid to soak away; no overflows are provided. No wastes are allowed to run into the street-gutters. During the hot weather the gutters are flushed daily, at other times occasionally during the week. No cases of contamination of sources of drinking-water are known to have occurred, as the cisterns in which such water is caught and stored are not exposed to the soakage from cesspools. The wastes from water-closets very often run into cesspools. When these pools are full, or when the health inspector, after an examination, thinks it necessary, he orders them emptied. A record is kept of date, and after a certain period the inspector orders another cleaning, the record showing about when the pool should be full again.

Human excreta.—Less than 5 per cent. of the houses have water-closets, and of these only few deliver their wastes into the public sewers, much the larger part going into cesspools. Privy-vaults are thus in general use. No regulations govern their construction, but in nearly all cases they are water-tight boxes. They are emptied, like cesspools, in accordance with the schedule of dates kept by the health officer, the work being done by licensed scavengers. The dry-earth system is very little used. The night-soil is taken beyond the city limits, and is generally used by farmers for manure. None is allowed, however, on the gathering-ground of the public water-supply.

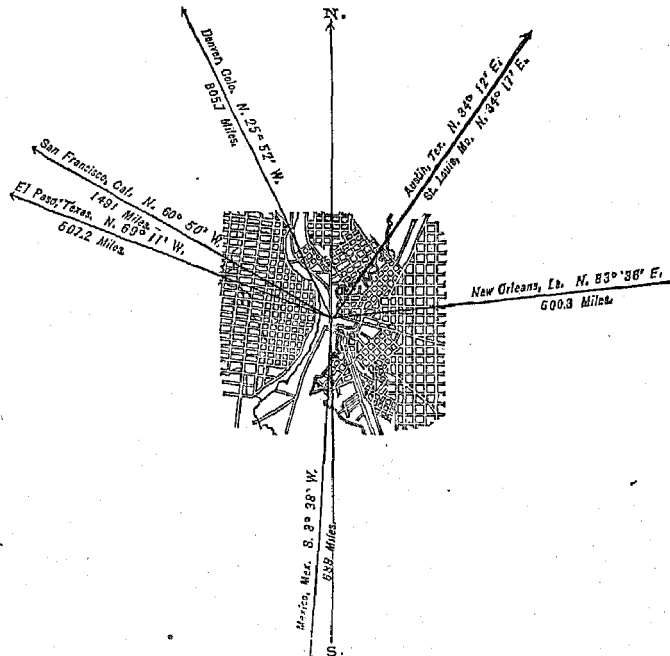
Manufacturing wastes.—There are no manufactures creating wastes liable to be a cause of nuisance.

SAN ANTONIO, BEXAR COUNTY, TEXAS.

POPULATION

IN THE
AGGREGATE,
1850-1880.

	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	
1840.....	
1850.....	3,488
1860.....	8,235
1870.....	12,256
1880.....	20,550



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	10,673
Female.....	9,877
Native	14,952
Foreign-born	5,598
White.....	17,514
Colored	3,036

Latitude: 29° 25' North; Longitude: 98° 25' (west from Greenwich); Altitude: 676 feet.

FINANCIAL CONDITION:

Total Valuation: \$8,296,252; per capita: \$404 00. Net Indebtedness: \$155,266; per capita: \$7 56. Tax per \$100: \$2 35.

HISTORICAL SKETCH.

As early as 1595, Spanish settlements were made along the Rio Grande, and the records of the early settlers show that there was then an Indian town where now stands the city of San Antonio. No record of its early Indian history remains, but the spear and arrow-heads and the stone implements which are found buried deep in the earth around the city tell mutely of Indian battles as fierce and sanguinary as any which have since reddened the streets of a city whose history is so inseparably united with that of Texas that it can not be understood if told by itself.

The Spanish began to make settlements in Texas during the last decade of the seventeenth century, and in 1692 a little village was founded near the head of the San Antonio river. This place, which was known as San Fernandes, was the germ of the present San Antonio. In the year 1714, St. Denis, sent by Cardillac, then governor of Louisiana, on a trading expedition to Mexico, built the "old San Antonio road", which became the great thoroughfare through Texas. The little San Fernandes was greatly benefited by this road, and received added importance from the removal thither in 1718 of the mission of San Antonio de Valero, which had been established in 1703 upon the Rio Grande; the *Alamo*, destined to eternal remembrance in Texan hearts, was built as the chapel of this mission.

Already, in 1716, the place had received its baptism of blood, for a French force under St. Denis and La Harpe was defeated there by the Spanish. The first determined effort at a settlement was made in 1718 under De Alarcoune. An effort was made to obtain settlers from the best of Spanish families, and, in 1730, 16 families were brought thither from the Canaries at the royal expense. The Indians were determined in their hostilities to the new-comers, and from 1729 until 1806 the town, which was made the presidio of San Antonio de Bexar on November 28, 1730, was engaged in a continual struggle with the Indians for its very existence.

Americans seem never to have visited the town prior to 1801, but the news of the wonderful fertility of the land of Texas began to attract attention about that time, and when the Louisiana purchase transferred to the United States the title to the French possessions in America, an old claim of France to the possession of Texas, based on the landing of La Salle in 1585 at Matagorda bay, was revived. This claim came very near becoming a cause of war, when coupled with the harsh treatment to which all Americans were subjected by the Mexican authorities, and only an agreement of the opposing Mexican and American commanders prevented actual hostilities. By this agreement a narrow strip of land between the Sabine river and the Arroyo Hondo was declared neutral territory. Upon this a band of outlaws established themselves for the purpose of robbing the trains of merchandise which crossed it on their way from Mexico and Texas to the Red river; and they became so annoying that, in spite of the fact that they were upon Texan territory, the Secretary of War gave orders for an expedition to be sent against them. The expedition was commanded by Lieutenant Magee, and proved successful, but it had consequences which had not been foreseen.

Mexico was then, 1812, divided between the royalist and the republican factions; and Magee was so much moved by the representations of Don Bernardo Guticorez, a Mexican sent to the United States to obtain recruits for the republican cause, that he resigned his commission in the United States army, collected a force called the "republican army of the north"—ostensibly under Guticorez' command, but really under his own—and by a series of brilliant movements soon made himself master of Nacogdoches and La Bahia. He was besieged in the latter place by the Mexicans, and, becoming disheartened, determined to surrender; but his men refused to yield, and after a hard contest defeated the enemy. Magee perished by his own hand, and his place was taken by Major Kemper, who, after defeating the Mexicans at Rosalie, received the capitulation of San Antonio, the chief city of Texas. The glory of this victory was dimmed by an act for which, however, the Americans were in no way responsible. One of the captains in the Mexican contingent of the "republican army of the north", eager to revenge the death of his father at the hands of the royalists, secretly obtained the consent of the Mexican commander to the murder of the captured officers. The American officers were so grieved and enraged at this outrageous act that they threw up their commissions and returned to the United States. The army, released from the strict discipline they had maintained, soon became demoralized, and barely escaped defeat at the battle of the Alazan, June 4, 1813, while it was completely routed in August at the battle of the Medina. The royalists took ample vengeance for the murder at San Antonio, and after shooting their prisoners, marched into San Antonio, where they committed the wildest excesses.

The royalist rulers, now firmly established, opposed American influences by all means in their power; but, in spite of opposition, Moses Austin obtained a grant of land from the Mexican government in 1820, and established upon it an American colony in Texas. The war between the two parties in Mexico had by no means ended with the defeat of the republicans in Texas. It was continued until (in 1824) the triumph of the republican party was complete and Mexico was made a republic. Under the constitution of 1824 Texas was united with Coahuila to form one of the states of the republic, and the rights of the American colonists were recognized and guaranteed. The seat of government was removed from San Antonio. This was a severe blow to its prosperity, and its effects were not lessened by attacks from the Indians, who for the next ten years sought every opportunity of annoying the citizens. But in spite of these disadvantages, many Americans established themselves in San Antonio, and engaged in trade in and around it.

With the growing success of the party of Santa Anna in the republic, the position of the American colonists became worse and worse. They were gradually deprived of their rights, and finally ordered to leave the country. This was too much. Organizing rapidly, the colonists determined to compel the fulfillment of the constitution of 1824 by force of arms. Convinced that their only hope of safety and success lay in the capture of San Antonio, which was held by a force under General Cos, the little army, under command of Stephen T. Austin, advanced October 20, 1835, to within a few miles of the city. Twice the Mexican forces were defeated in the open field, and finally they shut themselves up in the city to await the result of the siege which General Austin now began. Austin was, however, called away by an appointment as commissioner to the United States on behalf of the provisional government of Texas, and his place was taken by General Burleson, who continued to prosecute the siege vigorously. The colonists had left their homes at a moment's warning; they received no pay for their services, and their families were sadly in need of their presence. The siege operations were, of course, slow, and dissatisfaction grew and spread, till it seemed as if the army would give up the attempt to take the city and disperse. Accordingly it was decided to try and storm the place, and on December 6, 1835, a column under Colonel Milam advanced to the assault. Forcing its way into the city, and fighting from house to house, the storming party, after three days of battle, on the second of which its leader was killed, was successful, and San Antonio surrendered.



SAN ANTONIO,
TEXAS.

SCALE OF FEET.

0 500 1000 1500 2000

In the mean time Santa Anna had been extending his power over Mexico, and now Texas alone stood out against him. He therefore determined to undertake its reduction, and on February 22, 1836, appeared before San Antonio, which was defended by a small force of 145 men under Colonel Travis. The defenders posted themselves within the Alamo, the mission of San Antonio de Valero, which was admirably calculated for defense; and here Colonel Travis held out for 11 days against the whole army of Santa Anna. On Sunday, March 6, 1836, the twelfth day of the siege, the Mexican bugles sounded the charge and the column under Santa Anna's best leaders sprang forward, their bugles now sounding the order "No quarter!" The Texans, nerved to the struggle by this sound, twice repulsed the attacking parties, but were unable to beat back the third charge, and withdrew to the chambers of the Alamo, where they sold their lives as dearly as they could. Not a man of the defenders is known to have escaped; the orders of Santa Anna to spare not were obeyed to the letter. Forty-six days later, "Remember the Alamo!" was the cry which spurred on Houston's men at San Jacinto, and with the defeat and capture of Santa Anna, San Antonio became Texan, the leading city of the new republic.

Until 1842 San Antonio was not again troubled by the Mexicans, but a continual warfare with the Indians kept the citizens always on the alert. In 1840 several Comanche chiefs asked for peace. They were told to come to San Antonio and bring with them their captives. They came bringing only one, although it was known that others were in their power. A dispute arising on this subject, the chiefs were told they would be detained as hostages until all the captives had been returned. Seizing their weapons the Indians fought until all were killed; thus adding another to the bitter contests which have taken place within the city.

Although Texas had been recognized as an independent nation, Mexico still refused to acknowledge her independence, and, in 1842, sent a force to seize San Antonio. The unsuspecting city fell at once into the invaders' hands, but no harm was inflicted. The government was remodeled, Mexican alcaldes put in the places of magistrates, and, after a stay of two days, the unwelcome visitors departed. This performance was repeated in September of the same year, a Mexican force under General Woll suddenly seizing the city. Many citizens were imprisoned, among them several who had come to San Antonio to attend the courts, which were then sitting there. Tired of these infringements of their rights, the Texans got together a small body of men, defeated the Mexicans, and drove them from the city, which has never since been in Mexican hands. In 1846 Texas was annexed to the United States, and San Antonio was made the military headquarters of the department of Texas. During the civil war the trade with Mexico was still maintained, and San Antonio was perhaps the most prosperous city in confederate hands. In 1865 the United States troops were again established in the city, and from that time its growth has been constant.

But while constant, the growth was not rapid until 1877, when the Galveston, Harrisburg, and San Antonio railroad reached the city. Change followed change with wonderful rapidity, and the old Spanish and Mexican town was soon transformed into an American city. San Antonio has become the principal wool market of western Texas. The San Pedro and San Antonio rivers offer a good water-power. The city is also the leading market for hides, and is an important distributing point for cotton, large amounts of which are sent to Mexico. The trade with Mexico is already large, but it is capable of being greatly extended. The city is an anomaly. Old houses, whose fort-like appearance speaks of a time when Indian wars were a constant source of apprehension, stand side by side with the wooden warehouses. The old mission buildings of the pious Catholic priests look out upon the railroad station, and gas-pipes run through streets still intersected by the irrigation ditches of the early Spanish settlers. It is full of interest to the tourist, but to the sons of Texas it is almost a shrine; for in its streets has flowed again and again the blood of heroes, fighting for home, for liberty, and for independence.

SAN ANTONIO IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of San Antonio:

LOCATION.

San Antonio is situated in latitude 29° 25' north, longitude 98° 25' west from Greenwich, and about 216 miles by railroad from Houston. The altitude of the city, at the office of the Signal Service, is 676 feet above the sea-level. The San Pedro and San Antonio rivers flow through the city, offering a considerable water-power, which has not, however, been utilized. Neither is navigable.

RAILROAD COMMUNICATIONS.

Until 1877 no railroad entered the city, but since that date the Galveston, Harrisburg, and San Antonio railroad, termini Houston and San Antonio, and the International and Great Northern railroad, termini San Antonio and Longview, have been completed to this point. The two companies enter the city over the same road-bed, the trains of the International and Great Northern using the Galveston, Houston, and San Antonio tracks.

TRIBUTARY COUNTRY.

The country immediately tributary to San Antonio is devoted almost entirely to agriculture, although there are a few wool-washing establishments on the river below the city.

TOPOGRAPHY.

San Antonio is situated in the midst of a level plain, crossed by two little rivers—the San Pedro and the San Antonio—and shut in on the west by the heights of Alazan, a mile distant from the city. The soil is a fertile black loam from 2 to 6 feet in depth and resting upon a gravelly clay. The contour is admirably adapted for surface-drainage. The heights of the Alazan furnish a soft magnesian limestone, which has been extensively used in building.

CLIMATE.

The highest summer temperature in average years is 103°, but a temperature of 108° was recorded in 1877. The lowest recorded winter temperature is 10°, but in average years the thermometer rarely falls below 17°.

STREETS.

There is no record of the total length of the streets. From 15 to 20 miles are paved with gravel resting upon a soft limestone bed; no other streets are paved. The cost of the gravel paving is about 75 cents per square yard. The sidewalks are mostly of sandstone, but new ones are generally made of cement, which gives great satisfaction, and will undoubtedly become the favorite and prevailing material. No street-gutters are made, the roadway being extended clear to the curbstones, which are generally of limestone or cement, the latter predominating, though in thinly settled portions they are sometimes of wood. The householders have planted shade-trees quite generally along the residence streets, consulting their own tastes as to the methods of planting and the species of trees, which are mostly China trees, mulberry, and hackberry; the city exercises no supervision. Construction of streets is generally done by contract, repairing by day labor, both under supervision of the street commissioner. About \$10,000 is annually expended in building, repairing, and cleaning the streets. The city owns a steam stone-crusher, but does not use it, as the sifted flint gravel is considered quite as good as broken stone and much cheaper. No steam-roller is used.

HORSE-RAILROADS.

There is one horse-railroad. This has about 6 miles of track, owns 14 cars and 50 mules, employs 23 men, and during the past year carried 507,243 passengers at fares of 5 cents.

WATER-WORKS.

The city is supplied with water by a private corporation which completed its works in 1878. Water is pumped from the San Antonio river by 2 Worthington duplex pumps driven by 2 large double turbine water-wheels, and is raised to a reservoir 150 feet above the Main plaza; from there it is distributed through more than 15 miles of pipes and mains.

GAS.

Gas has been introduced into all parts of the city, and nearly all the streets are lighted by it. The works are owned by a private corporation.

PUBLIC BUILDINGS.

The public buildings of San Antonio are valued at \$40,000, and include a two-story building used as the recorder's court and the police headquarters, a two-story engine-house, and 5 other buildings. The city hires a portion of the "French building" for municipal offices, and a building for the high school. There is no city hall.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The total area of the public parks is about 61 acres, of which *San Pedro Park*, situated at the northern end of the city, has 50 acres; *Travis Park*, on the east side of the San Antonio river, not far from the center of the city, has about 4 acres; and *Madison Square*, on the west side of the San Antonio, has 7 acres. With the exception of Madison square, which was a gift, the land upon which all the parks are situated belonged to the city, and little or nothing has ever been paid for construction and repairs. The ground on which San Pedro park, the only one of any importance, now stands was originally leased to a private person, the consideration being that he should construct the park in its present form, and during the lease, which is still running, keep it in good repair at his own expense. The yearly cost of maintenance of the parks to the city is less than \$500.

PLACES OF AMUSEMENT.

There are 3 theaters in the city: The Turner opera-house, seating capacity 1,126; Casino hall, seating capacity 600; and the Vaudeville theater, seating capacity about 800. The last-named place of amusement is closely akin to a concert- and beer-garden, as liquors are sold during the performances. Theaters pay a license of \$10 for each performance, of which \$5 goes to the state, \$2 50 to the county, and \$2 50 to the city. There are no concert-halls and lecture-rooms. The San Pedro park is rather a place of amusement than a public park as at present managed.

DRAINAGE; CEMETERIES; MARKETS.

No information on these subjects was furnished.

SANITARY AUTHORITY.

The chief sanitary officer of the city is the city physician, but the mayor and aldermen act as a board of health when necessary, their authority as the latter organization being, of course, co-extensive with their power in the former capacity. The city physician receives a salary of \$75 a month, and has charge of the maintenance of the public health. During the months of July and August, one policeman in each ward is assigned to the duty of inspecting all premises, and a number of cartmen are employed to carry away all filth, dirt, and rubbish every morning. The city physician reports to the city council all nuisances coming under his notice.

NUISANCES.

The city ordinances state at length the various acts and conditions which are declared nuisances. When a nuisance comes under the notice of the city physician, or of the street commissioner or city marshal, orders are given to the person causing it to abate it at once, and if this order is neglected he becomes liable to a fine. Nuisances rarely arise from defective sewerage or poor street-cleaning. Garbage is removed beyond the city proper and burned.

BURIAL OF THE DEAD.

No burial is allowed within 1 mile of the court-house, without a permit from the city council, under penalty of a fine of not less than \$50 nor more than \$100. The city sextons are forbidden to make any interment within the limits of the city without a certificate from the city physician, and they are required to keep a record of these certificates and interments, and to make a report every Saturday to the city physician and to the mayor of all persons deceased and interred during the past week.

INFECTIOUS DISEASES.

Small-pox patients are isolated in tents or in a pest-house situated in the western part of the city, the place being conspicuously marked with a small-pox flag to warn passers of their danger. Scarlet fever is rather unusual in San Antonio, but when a case occurs the patient is quarantined at home. When contagious diseases occur in schools, those exposed to contagion are removed, and those suffering from the disease are isolated at home. Vaccination is not compulsory, and is done at the public expense only for the poor. Any person who knows of the existence of contagious, infectious, or malignant diseases in the city must notify the mayor at once.

A correct register (weekly, monthly, and yearly) is kept at the mayor's office of deaths, and one of diseases when in epidemic form. No record of births is kept.

REPORTS.

The board of health makes no reports as a board to the city council. The city physician makes regular reports in regard to the performance of his duty.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned by a force hired especially for the purpose by the city, the work being done entirely by hand. After every rain the force is set to work to scrape and clean the paved streets, and every day a scavenger force is kept busy removing filth and rubbish from them. No cleaning is done on the unpaved streets. The sweepings are taken outside the city proper, but not outside its limits, and there burned. The cost of this work is included in the \$10,000 annually expended on the streets.

Removal of garbage and ashes.—Household rubbish is removed by the city, but offal is removed by individuals. Ashes, rubbish and garbage may be kept in the same vessel. They are disposed of in the same way as street-sweepings. The cost of this service is about \$2,200, and is included in the street appropriation.

Dead animals.—The owner of any animal dying within the city is required to remove the carcass to the soft-rock quarries at Powder-house hill, and there bury it not less than 4 feet deep.

Liquid household wastes.—The liquid household wastes are run into cesspools, only very little passing into the two small sewers that have been built. The cesspools are in all cases porous, most, if not all, of them being simple pits, not even bricked on the sides, and they have no overflows, the contents escaping through the soil. The street-gutters are not flushed, as no wastes run into them. It seems probable that wells have been contaminated by the overflowing or underground escape of the contents of vaults and cesspools, but such cases are uncommon.

Human excreta.—About 1 per cent. of the houses are provided with water-closets, all the rest depending on privy-vaults, which are nearly always simple holes dug in the ground and used until they are full, when some dirt is thrown over them, the privy placed over a new hole, and the process repeated. The dry-earth system is rarely used.

Manufacturing wastes.—The city requires that wool-washing, if done in or near the river, shall be done at some point below San Antonio. There are no other wastes likely to be a cause of nuisance.

POLICE.

The police force of San Antonio is appointed and governed by the mayor and city council. The chief executive officer is the city marshal, who receives a salary of \$125 a month, and has general charge of his department, subject to the orders of the mayor. He is assisted by 2 assistant marshals, the first receiving \$125 and the second \$100 per month. The number of patrolmen is limited by the city ordinances to 18, each of whom receives \$70 per month. An allowance of \$40, payable semi-annually in instalments of \$20 each, is made to each man for a uniform. No details as to the number and causes of arrests, or the cost of the department during the past year, could be obtained. Special policemen can be appointed at any time by the mayor when he thinks it necessary, and while on duty they receive a salary of \$2 per day, and are treated as members of the regular force.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of San Antonio for 1880, being taken from tables prepared for the Tenth Census by Max Neuenendorff, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries.....	71	\$810,050	300	13	48	\$137,781	\$328,476	\$642,412
Blacksmithing.....	10	15,450	20	3	10	10,850	9,440	28,750
Boots and shoes, including custom work and repairing.....	7	8,600	20			5,750	7,800	31,300
Carpentering.....	3	3,500	23			10,200	16,000	33,300
Carriages and wagons.....	3	12,000	12		3	6,004	7,000	20,980
Flouring and grist-mill products.....	3	40,000	10			10,100	162,000	205,000
Mineral and soda waters.....	4	7,600	2	3		1,800	1,850	6,400
Painting and paperhanging.....	4	4,200	24			6,875	3,900	14,000
Printing and publishing.....	4	27,700	46	2	26	29,520	16,500	71,000
Saddlery and harness.....	6	30,800	26		4	11,650	19,800	44,700
Tinware, copperware, and sheet-iron ware.....	3	4,400	10		1	2,100	3,500	7,250
All other industries (a).....	24	156,300	89	5	4	42,812	80,080	170,732

a Embracing brick and tile; cement; confectionery; cooperage; foundry and machine-shop products; ice, artificial; jewelry; leather, curried; leather, tanned; lime; liquors, malt; lumber, sawed; soap and candles; stone and earthen-ware; tobacco, cigars and cigarettes; and wheelwrighting.

From the foregoing table it appears that the average capital of all establishments is \$4,366 90; that the average wages of all hands employed is \$381 66 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$6,820 01.